Department of Defense
Fiscal Year (FY) 2025 Budget Estimates

March 2024

Office of the Secretary Of Defense

Defense-Wide Justification Book Volume 3 of 5

Research, Development, Test & Evaluation, Defense-Wide

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Table of Volumes

Defense Advanced Research Projects Agency..... Volume 1
Missile Defense Agency..... Volume 2
Office of the Secretary Of Defense..... Volume 3
Chemical and Biological Defense Program.....Volume 4
Defense Contract Audit Agency..... Volume 5
Defense Contract Management Agency..... Volume 5
Defense Counterintelligence and Security Agency.....Volume 5
Defense Information Systems Agency.....Volume 5
Defense Logistics Agency.....Volume 5
Defense Security Cooperation Agency.....Volume 5
Defense Technical Information Center.....Volume 5
Defense Threat Reduction Agency.....Volume 5
DoD Human Resources Activity..... Volume 5
Operational Test and Evaluation, Defense..... Volume 5
The Joint Staff..... Volume 5
United States Cyber Command..... Volume 5

United States Special Operations Command.....Volume 5

Volume 3 Table of Contents

Comptroller Exhibit R-1..... Volume 3 - v

Program Element Table of Contents (by Budget Activity then Line Item Number).....Volume 3 - xxv

Program Element Table of Contents (Alphabetically by Program Element Title).....Volume 3 - xxxv

Exhibit R-2s.....Volume 3 - 1

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Department of Defense
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
Research, Development, Test and Evaluation, Defense-Wide	10,376,829	9,072,174	8,565,693
Total Research, Development, Test, & Evaluation	**10,376,829**	**9,072,174**	**8,565,693**

*A full-year FY 2024 appropriation for this account was not enacted at the time the budget was prepared; account is operating under the Further Additional Continuing Appropriations and Other Extensions Act, 2024 (Public Law 118-35). The amounts included for FY 2024 reflect the annualized level provided by the continuing resolution.

Department of Defense
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
Summary Recap of Budget Activities			
Basic Research	376,704	348,128	363,428
Applied Research	315,317	275,387	245,117
Advanced Technology Development	3,293,168	2,005,670	1,870,413
Advanced Component Development & Prototypes	2,673,989	2,814,666	2,579,768
System Development & Demonstration	603,501	990,682	675,377
Management Support	2,136,602	1,377,693	1,567,072
Operational Systems Development	962,493	1,238,593	1,246,611
Software And Digital Technology Pilot Programs	15,055	21,355	17,907
Total Research, Development, Test, & Evaluation	**10,376,829**	**9,072,174**	**8,565,693**
Summary Recap of FYDP Programs			
General Purpose Forces	2,933	3,112	3,151
Intelligence and Communications	181,935	232,609	189,800
Guard and Reserve Forces		5,530	
Research and Development	10,190,901	8,731,923	8,240,102
Administration and Associated Activities	1,060	99,000	132,640
Total Research, Development, Test, & Evaluation	**10,376,829**	**9,072,174**	**8,565,693**

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Defense-Wide
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
Summary Recap of Budget Activities			
Basic Research	376,704	348,128	363,428
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Defense-Wide
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
Secretary of Defense	10,376,829	9,072,174	8,565,693
Total Research, Development, Test and Evaluation, Defense-Wide	**10,376,829**	**9,072,174**	**8,565,693**

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Defense-Wide
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
3	0601108D8Z	High Energy Laser Research Initiatives	01	U	20,789	16,329	16,518
4	0601110D8Z	Basic Research Initiatives	01	U	90,518	71,783	77,132
6	0601120D8Z	National Defense Education Program	01	U	168,539	159,549	169,986
7	0601228D8Z	Historically Black Colleges and Universities/Minority Institutions	01	U	96,858	100,467	99,792
	Basic Research				**376,704**	**348,128**	**363,428**
9	0602000D8Z	Joint Munitions Technology	02	U	22,665	19,157	19,373
11	0602128D8Z	Promotion and Protection Strategies	02	U	3,155	3,219	3,191
12	0602230D8Z	Defense Technology Innovation	02	U	18,453	55,160	38,515
13	0602234D8Z	Lincoln Laboratory Research Program	02	U	42,581	46,858	47,528
14	0602251D8Z	Applied Research for the Advancement of S&T Priorities	02	U	60,877	66,866	51,555
18	0602668D8Z	Cyber Security Research	02	U	41,258	17,437	17,652
19	0602669D8Z	Microelectronics Commons - Applied Research	02	U	65,062		
20	0602675D8Z	Social Sciences for Environmental Security	02	U	3,854	4,718	5,456
25	0602751D8Z	Software Engineering Institute (SEI) Applied Research	02	U	9,788	11,168	11,310
26	0602890D8Z	High Energy Laser Research	02	U	47,624	48,804	48,640
27	0602891D8Z	FSRM Modelling	02	U		2,000	1,897
	Applied Research				**315,317**	**275,387**	**245,117**
29	0603000D8Z	Joint Munitions Advanced Technology	03	U	33,577	37,706	41,072

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Defense-Wide
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
30	0603021D8Z	National Security Innovation Capital	03	U		15,085	14,983
31	0603121D8Z	SO/LIC Advanced Development	03	U	4,765	30,102	5,176
32	0603122D8Z	Combating Terrorism Technology Support	03	U	148,907	75,593	76,639
33	0603133D8Z	Foreign Comparative Testing	03	U	26,310	27,078	30,007
34	0603142D8Z	Mission Engineering & Integration (ME&I)	03	U			110,628
39	0603183D8Z	Joint Hypersonic Technology Development &Transition	03	U	65,706	52,292	51,941
40	0603225D8Z	Joint DoD-DoE Munitions Technology Development	03	U	18,291	19,567	19,826
44	0603288D8Z	Analytic Assessments	03	U	28,168	24,328	30,594
45	0603289D8Z	Advanced Innovative Analysis and Concepts	03	U	51,696	55,626	56,390
46	0603330D8Z	Quantum Application	03	U		75,000	69,290
47	0603342D8Z	Defense Innovation Unit (DIU)	03	U	67,646	104,729	109,614
48	0603375D8Z	Technology Innovation	03	U	18,505	123,837	74,549
49	0603379D8Z	Advanced Technical Integration	03	U		11,000	26,053
51	0603527D8Z	RETRACT LARCH	03	U	76,729	57,401	
52	0603618D8Z	Joint Electronic Advanced Technology	03	U	23,289	19,793	20,188
53	0603662D8Z	Networked Communications Capabilities	03	U	3,011	11,197	5,234
54	0603669D8Z	Microelectronics Commons - Advanced Technology Development (ATD)	03	U	269,256		
55	0603680D8Z	Defense-Wide Manufacturing Science and Technology Program	03	U	720,631	252,965	190,557
58	0603716D8Z	Strategic Environmental Research Program	03	U	86,466	60,387	58,838

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Defense-Wide
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
60	0603727D8Z	Joint Warfighting Program	03	U	1,841	2,749	2,684
65	0603769D8Z	Distributed Learning Advanced Technology Development	03	U	161		
66	0603781D8Z	Software Engineering Institute	03	U	11,874	16,699	16,982
67	0603838D8Z	Defense Innovation Acceleration (DIA)	03	U	284,902	257,110	165,798
68	0603924D8Z	High Energy Laser Advanced Technology Program	03	U	108,865	111,799	110,367
69	0603941D8Z	Test & Evaluation Science & Technology	03	U	968,723	345,384	268,722
70	0603945D8Z	International Innovation Initiatives	03	U		25,000	125,680
71	0603950D8Z	National Security Innovation Network	03	U	77,032	21,575	21,322
72	0604055D8Z	Operational Energy Capability Improvement	03	U	194,019	171,668	167,279
73	0303367D8Z	Spectrum Access Research and Development	03	U	2,798		
	Advanced Technology Development				**3,293,168**	**2,005,670**	**1,870,413**
75	0603161D8Z	Nuclear and Conventional Physical Security Equipment RDT&E ADC&P	04	U	39,855	76,764	63,162
76	0603600D8Z	WALKOFF	04	U	144,824	143,486	149,704
77	0603851D8Z	Environmental Security Technical Certification Program	04	U	120,029	117,196	136,513
93	0603923D8Z	Coalition Warfare	04	U	10,932	12,103	9,890
94	0604011D8Z	Next Generation Information Communications Technology (5G)	04	U	246,458	179,278	139,427
95	0604016D8Z	Department of Defense Corrosion Program	04	U	3,058	3,185	2,637
98	0604124D8Z	Chief Digital and Artificial Intelligence Officer (CDAO) - MIP	04	U	70,783	34,350	

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Defense-Wide
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
99	0604125D8Z	Advanced Manufacturing Components and Prototypes	04	U			16,776
101	0604250D8Z	Advanced Innovative Technologies	04	U	1,116,024	1,085,826	994,226
102	0604294D8Z	Trusted & Assured Microelectronics	04	U	624,272	810,839	593,609
103	0604331D8Z	Rapid Prototyping Program	04	U	105,990	110,291	152,126
105	0604341D8Z	Defense Innovation Unit (DIU) Prototyping	04	U	40,368		
106	0604400D8Z	Department of Defense (DoD) Unmanned System Common Development	04	U	7,305	2,643	2,527
108	0604555D8Z	Operational Energy Capability Improvement - Non S&T	04	U	38,665	53,726	53,705
109	0604669D8Z	Microelectronics Commons - Advanced Component Development (ACD)	04	U	65,682		
110	0604682D8Z	Wargaming and Support for Strategic Analysis (SSA)	04	U	2,711	3,206	3,559
111	0604775D8Z	Defense Rapid Innovation Program	04	U			10,020
112	0604790D8Z	Rapid Defense Experimentation Reserve (RDER)	04	U	24,033	79,773	53,149
113	0604791D8Z	Multi-Domain Joint Operations (MDJO)	04	U			11,383
122	0604924D8Z	High Energy Laser Advanced Component Development & Prototype	04	U			2,931
129	0305245D8Z	Intelligence Capabilities and Innovation Investments	04	U	13,000	3,000	51,784
132	0901579D8Z	Office of Strategic Capital (OSC)	04	U		99,000	132,640
	Advanced Component Development & Prototypes				**2,673,989**	**2,814,666**	**2,579,768**
134	0604123D8Z	Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities	05	U	274,853	615,246	371,833
135	0604133D8Z	Alpha-1 Development Activities	05	U			53,307

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Defense-Wide
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
136	0604161D8Z	Nuclear and Conventional Physical Security Equipment RDT&E SDD	05	U	6,328	6,229	13,549
138	0604771D8Z	Joint Tactical Information Distribution System (JTIDS)	05	U	8,634	9,775	12,893
142	0605022D8Z	Defense Exportability Program	05	U	30,142	18,981	15,779
143	0605027D8Z	OUSD(C) IT Development Initiatives	05	U	5,605	5,456	7,564
146	0605210D8Z	Defense-Wide Electronic Procurement Capabilities	05	U	6,649	6,899	9,485
147	0605294D8Z	Trusted & Assured Microelectronics	05	U	245,366	297,586	150,436
148	0605649D8Z	Acquisition Integration and Interoperability (AI2)	05	U			12,804
149	0605755D8Z	Radiological and Nuclear Defense Modernization System Development and Demonstration	05	U			3,575
150	0605772D8Z	Nuclear Command, Control, & Communications	05	U	3,422	4,110	3,849
151	0305304D8Z	DoD Enterprise Energy Information Management (EEIM)	05	U	7,663	8,159	7,152
152	0305310D8Z	Counterproliferation Advanced Development	05	U	14,839	14,471	13,151
153	0505167D8Z	Radiological and Nuclear Defense Modernization	05	U		3,770	
	System Development & Demonstration				**603,501**	**990,682**	**675,377**
155	0604122D8Z	JADC2 Development and Experimentation Activities	06	U			222,945
156	0604774D8Z	Defense Readiness Reporting System (DRRS)	06	U	8,476	12,746	11,415
157	0604875D8Z	Joint Systems Architecture Development	06	U	6,277	8,426	9,690
158	0604940D8Z	Central Test and Evaluation Investment Development (CTEIP)	06	U	1,258,077	833,792	782,643
159	0604942D8Z	Assessments and Evaluations	06	U	5,360	5,810	1,503

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Defense-Wide
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
160	0604944D8Z	Assessments and Evaluations, DoD	06	U			4,253
162	0605100D8Z	Joint Mission Environment Test Capability (JMETC)	06	U	188,696	187,421	209,008
164	0605128D8Z	Classified Program USD(P)	06	U	145,800		
165	0605142D8Z	Systems Engineering	06	U	37,174	39,949	24,669
166	0605151D8Z	Studies and Analysis Support - OSD	06	U	5,123	6,292	6,289
167	0605161D8Z	Nuclear Matters-Physical Security	06	U	17,370	21,043	19,871
168	0605170D8Z	Support to Networks and Information Integration	06	U	9,103	10,504	8,580
169	0605200D8Z	General Support to OUSD(Intelligence and Security)	06	U	16,112	2,980	3,155
174	0605502D8Z	Small Business Innovative Research	06	U	235,106		
177	0605711D8Z	Critical Technology Analysis	06	U			11,422
178	0605790D8Z	Small Business Innovation Research (SBIR)/ Small Business Technology Transfer (STTR) Administration	06	U	3,820	3,831	5,346
179	0605797D8Z	Maintaining Technology Advantage	06	U	31,682	38,923	31,629
180	0605798D8Z	Defense Technology Analysis	06	U	53,695	60,404	45,370
183	0605804D8Z	Development Test and Evaluation	06	U	25,286	37,353	37,233
186	0606005D8Z	Special Activities	06	U		18,088	18,263
187	0606100D8Z	Budget and Program Assessments	06	U	14,095	14,427	14,272
188	0606114D8Z	Analysis Working Group (AWG) Support	06	U	4,279	4,200	2,814
189	0606135D8Z	Chief Digital and Artificial Intelligence Officer (CDAO) Activities	06	U	12,394	17,247	9,262
190	0606225D8Z	ODNA Technology and Resource Analysis	06	U	3,258	3,386	3,403

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Defense-Wide
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
191	0606300D8Z	Defense Science Board	06	U	2,409	2,352	6,536
192	0606301D8Z	Aviation Safety Technologies	06	U		213	1,885
193	0606771D8Z	Cyber Resiliency and Cybersecurity Policy	06	U	50,077	45,194	40,401
194	0606774D8Z	Defense Civilian Training Corps	06	U			27,054
195	0606775D8Z	Joint Production Accelerator Cell (JPAC)	06	U			5,010
197	0203345D8Z	Defense Operations Security Initiative (DOSI)	06	U	2,933	3,112	3,151
	Management Support				**2,136,602**	**1,377,693**	**1,567,072**
211	0604011D8Z	Next Generation Information Communications Technology (5G)	07	U			12,424
213	0607162D8Z	Chemical and Biological Weapons Elimination Technology Improvement	07	U			4,254
214	0607210D8Z	Industrial Base Analysis and Sustainment Support	07	U	802,936	1,017,141	1,099,243
215	0607310D8Z	Counterproliferation Modernization	07	U	14,862	12,713	11,309
218	0607757D8Z	Radiological and Nuclear Defense Modernization Operational System Development	07	U			1,668
230	0303140D8Z	Information Systems Security Program	07	U	43,208	97,171	31,127
239	0303867D8Z	AMBIT - Post-Auctioned SRF	07	U	19,553		
242	0305104D8Z	Defense Industrial Base (DIB) Cyber Security Initiative	07	U	7,999	25,655	15,524
249	0305172D8Z	Combined Advanced Applications	07	U	39,510	52,736	42,355
252	0305186D8Z	Policy R&D Programs	07	U	10,231	6,263	6,220
253	0305199D8Z	Net Centricity	07	U	16,827	23,275	20,620

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Defense-Wide
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Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
260	0305245D8Z	Intelligence Capabilities and Innovation Investments	07	U	4,575		
263	0305387D8Z	Homeland Defense Technology Transfer Program	07	U	1,732	1,879	1,867
274	0505167D8Z	Radiological and Nuclear Defense Modernization	07	U		1,760	
278	0909999D8Z	Financing for Cancelled Account Adjustments	07	U	1,060		
	Operational Systems Development				**962,493**	**1,238,593**	**1,246,611**
292	0608648D8Z	Acquisition Visibility - Software Pilot Program	08	U	15,055	21,355	17,907
	Software And Digital Technology Pilot Programs				**15,055**	**21,355**	**17,907**
Total Research, Development, Test and Evaluation, Defense-Wide					**10,376,829**	**9,072,174**	**8,565,693**

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Secretary of Defense
FY 2025 President's Budget
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(Dollars in Thousands)

Mar 2024

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4	0601110D8Z	Basic Research Initiatives	01	U	90,518	71,783	77,132
6	0601120D8Z	National Defense Education Program	01	U	168,539	159,549	169,986
7	0601228D8Z	Historically Black Colleges and Universities/Minority Institutions	01	U	96,858	100,467	99,792
	Basic Research				**376,704**	**348,128**	**363,428**
9	0602000D8Z	Joint Munitions Technology	02	U	22,665	19,157	19,373
11	0602128D8Z	Promotion and Protection Strategies	02	U	3,155	3,219	3,191
12	0602230D8Z	Defense Technology Innovation	02	U	18,453	55,160	38,515
13	0602234D8Z	Lincoln Laboratory Research Program	02	U	42,581	46,858	47,528
14	0602251D8Z	Applied Research for the Advancement of S&T Priorities	02	U	60,877	66,866	51,555
18	0602668D8Z	Cyber Security Research	02	U	41,258	17,437	17,652
19	0602669D8Z	Microelectronics Commons - Applied Research	02	U	65,062		
20	0602675D8Z	Social Sciences for Environmental Security	02	U	3,854	4,718	5,456
25	0602751D8Z	Software Engineering Institute (SEI) Applied Research	02	U	9,788	11,168	11,310
26	0602890D8Z	High Energy Laser Research	02	U	47,624	48,804	48,640
27	0602891D8Z	FSRM Modelling	02	U		2,000	1,897
	Applied Research				**315,317**	**275,387**	**245,117**
29	0603000D8Z	Joint Munitions Advanced Technology	03	U	33,577	37,706	41,072

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Secretary of Defense
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
30	0603021D8Z	National Security Innovation Capital	03	U		15,085	14,983
31	0603121D8Z	SO/LIC Advanced Development	03	U	4,765	30,102	5,176
32	0603122D8Z	Combating Terrorism Technology Support	03	U	148,907	75,593	76,639
33	0603133D8Z	Foreign Comparative Testing	03	U	26,310	27,078	30,007
34	0603142D8Z	Mission Engineering & Integration (ME&I)	03	U			110,628
39	0603183D8Z	Joint Hypersonic Technology Development &Transition	03	U	65,706	52,292	51,941
40	0603225D8Z	Joint DoD-DoE Munitions Technology Development	03	U	18,291	19,567	19,826
44	0603288D8Z	Analytic Assessments	03	U	28,168	24,328	30,594
45	0603289D8Z	Advanced Innovative Analysis and Concepts	03	U	51,696	55,626	56,390
46	0603330D8Z	Quantum Application	03	U		75,000	69,290
47	0603342D8Z	Defense Innovation Unit (DIU)	03	U	67,646	104,729	109,614
48	0603375D8Z	Technology Innovation	03	U	18,505	123,837	74,549
49	0603379D8Z	Advanced Technical Integration	03	U		11,000	26,053
51	0603527D8Z	RETRACT LARCH	03	U	76,729	57,401	
52	0603618D8Z	Joint Electronic Advanced Technology	03	U	23,289	19,793	20,188
53	0603662D8Z	Networked Communications Capabilities	03	U	3,011	11,197	5,234
54	0603669D8Z	Microelectronics Commons - Advanced Technology Development (ATD)	03	U	269,256		
55	0603680D8Z	Defense-Wide Manufacturing Science and Technology Program	03	U	720,631	252,965	190,557
58	0603716D8Z	Strategic Environmental Research Program	03	U	86,466	60,387	58,838

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Secretary of Defense
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
60	0603727D8Z	Joint Warfighting Program	03	U	1,841	2,749	2,684
65	0603769D8Z	Distributed Learning Advanced Technology Development	03	U	161		
66	0603781D8Z	Software Engineering Institute	03	U	11,874	16,699	16,982
67	0603838D8Z	Defense Innovation Acceleration (DIA)	03	U	284,902	257,110	165,798
68	0603924D8Z	High Energy Laser Advanced Technology Program	03	U	108,865	111,799	110,367
69	0603941D8Z	Test & Evaluation Science & Technology	03	U	968,723	345,384	268,722
70	0603945D8Z	International Innovation Initiatives	03	U		25,000	125,680
71	0603950D8Z	National Security Innovation Network	03	U	77,032	21,575	21,322
72	0604055D8Z	Operational Energy Capability Improvement	03	U	194,019	171,668	167,279
73	0303367D8Z	Spectrum Access Research and Development	03	U	2,798		
	Advanced Technology Development				**3,293,168**	**2,005,670**	**1,870,413**
75	0603161D8Z	Nuclear and Conventional Physical Security Equipment RDT&E ADC&P	04	U	39,855	76,764	63,162
76	0603600D8Z	WALKOFF	04	U	144,824	143,486	149,704
77	0603851D8Z	Environmental Security Technical Certification Program	04	U	120,029	117,196	136,513
93	0603923D8Z	Coalition Warfare	04	U	10,932	12,103	9,890
94	0604011D8Z	Next Generation Information Communications Technology (5G)	04	U	246,458	179,278	139,427
95	0604016D8Z	Department of Defense Corrosion Program	04	U	3,058	3,185	2,637
98	0604124D8Z	Chief Digital and Artificial Intelligence Officer (CDAO) - MIP	04	U	70,783	34,350	

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Secretary of Defense
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
99	0604125D8Z	Advanced Manufacturing Components and Prototypes	04	U			16,776
101	0604250D8Z	Advanced Innovative Technologies	04	U	1,116,024	1,085,826	994,226
102	0604294D8Z	Trusted & Assured Microelectronics	04	U	624,272	810,839	593,609
103	0604331D8Z	Rapid Prototyping Program	04	U	105,990	110,291	152,126
105	0604341D8Z	Defense Innovation Unit (DIU) Prototyping	04	U	40,368		
106	0604400D8Z	Department of Defense (DoD) Unmanned System Common Development	04	U	7,305	2,643	2,527
108	0604555D8Z	Operational Energy Capability Improvement - Non S&T	04	U	38,665	53,726	53,705
109	0604669D8Z	Microelectronics Commons - Advanced Component Development (ACD)	04	U	65,682		
110	0604682D8Z	Wargaming and Support for Strategic Analysis (SSA)	04	U	2,711	3,206	3,559
111	0604775D8Z	Defense Rapid Innovation Program	04	U			10,020
112	0604790D8Z	Rapid Defense Experimentation Reserve (RDER)	04	U	24,033	79,773	53,149
113	0604791D8Z	Multi-Domain Joint Operations (MDJO)	04	U			11,383
122	0604924D8Z	High Energy Laser Advanced Component Development & Prototype	04	U			2,931
129	0305245D8Z	Intelligence Capabilities and Innovation Investments	04	U	13,000	3,000	51,784
132	0901579D8Z	Office of Strategic Capital (OSC)	04	U		99,000	132,640
	Advanced Component Development & Prototypes				**2,673,989**	**2,814,666**	**2,579,768**
134	0604123D8Z	Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities	05	U	274,853	615,246	371,833
135	0604133D8Z	Alpha-1 Development Activities	05	U			53,307

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Secretary of Defense
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
136	0604161D8Z	Nuclear and Conventional Physical Security Equipment RDT&E SDD	05	U	6,328	6,229	13,549
138	0604771D8Z	Joint Tactical Information Distribution System (JTIDS)	05	U	8,634	9,775	12,893
142	0605022D8Z	Defense Exportability Program	05	U	30,142	18,981	15,779
143	0605027D8Z	OUSD(C) IT Development Initiatives	05	U	5,605	5,456	7,564
146	0605210D8Z	Defense-Wide Electronic Procurement Capabilities	05	U	6,649	6,899	9,485
147	0605294D8Z	Trusted & Assured Microelectronics	05	U	245,366	297,586	150,436
148	0605649D8Z	Acquisition Integration and Interoperability (AI2)	05	U			12,804
149	0605755D8Z	Radiological and Nuclear Defense Modernization System Development and Demonstration	05	U			3,575
150	0605772D8Z	Nuclear Command, Control, & Communications	05	U	3,422	4,110	3,849
151	0305304D8Z	DoD Enterprise Energy Information Management (EEIM)	05	U	7,663	8,159	7,152
152	0305310D8Z	Counterproliferation Advanced Development	05	U	14,839	14,471	13,151
153	0505167D8Z	Radiological and Nuclear Defense Modernization	05	U		3,770	
	System Development & Demonstration				**603,501**	**990,682**	**675,377**
155	0604122D8Z	JADC2 Development and Experimentation Activities	06	U			222,945
156	0604774D8Z	Defense Readiness Reporting System (DRRS)	06	U	8,476	12,746	11,415
157	0604875D8Z	Joint Systems Architecture Development	06	U	6,277	8,426	9,690
158	0604940D8Z	Central Test and Evaluation Investment Development (CTEIP)	06	U	1,258,077	833,792	782,643
159	0604942D8Z	Assessments and Evaluations	06	U	5,360	5,810	1,503

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Secretary of Defense
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
160	0604944D8Z	Assessments and Evaluations, DoD	06	U			4,253
162	0605100D8Z	Joint Mission Environment Test Capability (JMETC)	06	U	188,696	187,421	209,008
164	0605128D8Z	Classified Program USD(P)	06	U	145,800		
165	0605142D8Z	Systems Engineering	06	U	37,174	39,949	24,669
166	0605151D8Z	Studies and Analysis Support - OSD	06	U	5,123	6,292	6,289
167	0605161D8Z	Nuclear Matters-Physical Security	06	U	17,370	21,043	19,871
168	0605170D8Z	Support to Networks and Information Integration	06	U	9,103	10,504	8,580
169	0605200D8Z	General Support to OUSD(Intelligence and Security)	06	U	16,112	2,980	3,155
174	0605502D8Z	Small Business Innovative Research	06	U	235,106		
177	0605711D8Z	Critical Technology Analysis	06	U			11,422
178	0605790D8Z	Small Business Innovation Research (SBIR)/ Small Business Technology Transfer (STTR) Administration	06	U	3,820	3,831	5,346
179	0605797D8Z	Maintaining Technology Advantage	06	U	31,682	38,923	31,629
180	0605798D8Z	Defense Technology Analysis	06	U	53,695	60,404	45,370
183	0605804D8Z	Development Test and Evaluation	06	U	25,286	37,353	37,233
186	0606005D8Z	Special Activities	06	U		18,088	18,263
187	0606100D8Z	Budget and Program Assessments	06	U	14,095	14,427	14,272
188	0606114D8Z	Analysis Working Group (AWG) Support	06	U	4,279	4,200	2,814
189	0606135D8Z	Chief Digital and Artificial Intelligence Officer (CDAO) Activities	06	U	12,394	17,247	9,262
190	0606225D8Z	ODNA Technology and Resource Analysis	06	U	3,258	3,386	3,403

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Secretary of Defense
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
191	0606300D8Z	Defense Science Board	06	U	2,409	2,352	6,536
192	0606301D8Z	Aviation Safety Technologies	06	U		213	1,885
193	0606771D8Z	Cyber Resiliency and Cybersecurity Policy	06	U	50,077	45,194	40,401
194	0606774D8Z	Defense Civilian Training Corps	06	U			27,054
195	0606775D8Z	Joint Production Accelerator Cell (JPAC)	06	U			5,010
197	0203345D8Z	Defense Operations Security Initiative (DOSI)	06	U	2,933	3,112	3,151
	Management Support				**2,136,602**	**1,377,693**	**1,567,072**
211	0604011D8Z	Next Generation Information Communications Technology (5G)	07	U			12,424
213	0607162D8Z	Chemical and Biological Weapons Elimination Technology Improvement	07	U			4,254
214	0607210D8Z	Industrial Base Analysis and Sustainment Support	07	U	802,936	1,017,141	1,099,243
215	0607310D8Z	Counterproliferation Modernization	07	U	14,862	12,713	11,309
218	0607757D8Z	Radiological and Nuclear Defense Modernization Operational System Development	07	U			1,668
230	0303140D8Z	Information Systems Security Program	07	U	43,208	97,171	31,127
239	0303867D8Z	AMBIT - Post-Auctioned SRF	07	U	19,553		
242	0305104D8Z	Defense Industrial Base (DIB) Cyber Security Initiative	07	U	7,999	25,655	15,524
249	0305172D8Z	Combined Advanced Applications	07	U	39,510	52,736	42,355
252	0305186D8Z	Policy R&D Programs	07	U	10,231	6,263	6,220
253	0305199D8Z	Net Centricity	07	U	16,827	23,275	20,620

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Secretary of Defense
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
260	0305245D8Z	Intelligence Capabilities and Innovation Investments	07	U	4,575		
263	0305387D8Z	Homeland Defense Technology Transfer Program	07	U	1,732	1,879	1,867
274	0505167D8Z	Radiological and Nuclear Defense Modernization	07	U		1,760	
278	0909999D8Z	Financing for Cancelled Account Adjustments	07	U	1,060		
	Operational Systems Development				**962,493**	**1,238,593**	**1,246,611**
292	0608648D8Z	Acquisition Visibility - Software Pilot Program	08	U	15,055	21,355	17,907
	Software And Digital Technology Pilot Programs				**15,055**	**21,355**	**17,907**
Total Secretary of Defense					**10,376,829**	**9,072,174**	**8,565,693**

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Program Element Table of Contents (by Budget Activity then Line Item Number)

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
3	01	0601108D8Z	High Energy Laser Research Initiatives	Volume 3 - 1
4	01	0601110D8Z	Basic Research Initiatives	Volume 3 - 5
6	01	0601120D8Z	National Defense Education Program (NDEP)	Volume 3 - 15
7	01	0601228D8Z	Historically Black Colleges and Universities and Minority-Serving Institutions	Volume 3 - 23

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
9	02	0602000D8Z	Joint Munitions Technology	Volume 3 - 31
11	02	0602128D8Z	Promotion and Protection Strategies	Volume 3 - 37
12	02	0602230D8Z	Defense Technology Innovation (Beyond 5G)	Volume 3 - 41
13	02	0602234D8Z	Lincoln Laboratory Research Program	Volume 3 - 47
14	02	0602251D8Z	Applied Research for the Advancement of S&T Priorities	Volume 3 - 61
18	02	0602668D8Z	Cyber Security Research	Volume 3 - 67

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
19	02	0602669D8Z	Microelectronics Commons	Volume 3 - 73
20	02	0602675D8Z	Social Sciences for Environmental Security	Volume 3 - 79
25	02	0602751D8Z	Software Engineering Institute (SEI) Applied Research	Volume 3 - 85
26	02	0602890D8Z	High Energy Laser Research	Volume 3 - 93
27	02	0602891D8Z	FSRM Modeling	Volume 3 - 101

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
29	03	0603000D8Z	Joint Munitions Advanced Technology	Volume 3 - 105
30	03	0603021D8Z	National Security Innovation Capital	Volume 3 - 113
31	03	0603121D8Z	SO/LIC Advanced Development	Volume 3 - 117
32	03	0603122D8Z	Combating Terrorism Technology Support	Volume 3 - 121
33	03	0603133D8Z	Foreign Comparative Testing	Volume 3 - 147
34	03	0603142D8Z	Mission Engineering and Integration (ME&I)	Volume 3 - 171
39	03	0603183D8Z	Joint Hypersonic Technology Development & Transition	Volume 3 - 183
40	03	0603225D8Z	Joint DoD-DoE Munitions Technology Development	Volume 3 - 191

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
44	03	0603288D8Z	Science and Technology (S&T) Analytic Assessments	Volume 3 - 195
45	03	0603289D8Z	Advanced Innovative Analysis and Concepts	Volume 3 - 205
46	03	0603330D8Z	Quantum Application	Volume 3 - 211
47	03	0603342D8Z	Defense Innovation Unit (DIU)	Volume 3 - 219
48	03	0603375D8Z	Technology Innovation	Volume 3 - 229
49	03	0603379D8Z	Advanced Technical Integration	Volume 3 - 235
51	03	0603527D8Z	Retract Larch	Volume 3 - 237
52	03	0603618D8Z	Joint Electronic Advanced Technology	Volume 3 - 241
53	03	0603662D8Z	Networked Communications Capability	Volume 3 - 249
54	03	0603669D8Z	Microelectronics Commons	Volume 3 - 255
55	03	0603680D8Z	Defense Wide Manufacturing Science and Technology Program	Volume 3 - 263
58	03	0603716D8Z	Strategic Environmental Research and Development Program (SERDP)	Volume 3 - 289
60	03	0603727D8Z	Joint Warfighting Program (JWP)	Volume 3 - 297
65	03	0603769D8Z	Distributed Learning Advanced Technology Development	Volume 3 - 301
66	03	0603781D8Z	Software Engineering Institute (SEI)	Volume 3 - 305
67	03	0603838D8Z	Defense Innovation Acceleration (DIA)	Volume 3 - 311
68	03	0603924D8Z	High Energy Laser Advanced Development	Volume 3 - 353
69	03	0603941D8Z	Test and Evaluation Science and Technology	Volume 3 - 357

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
70	03	0603945D8Z	International Innovation Initiatives	Volume 3 - 391
71	03	0603950D8Z	National Security Innovation Network	Volume 3 - 401
72	03	0604055D8Z	Operational Energy Capability Improvement (OECI)	Volume 3 - 407

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
75	04	0603161D8Z	Nuclear and Conventional Physical Security Equipment RDT&E ACD&P	Volume 3 - 423
76	04	0603600D8Z	WALKOFF	Volume 3 - 449
77	04	0603851D8Z	Environmental Security Technology Certification Program (ESTCP)	Volume 3 - 455
93	04	0603923D8Z	Coalition Warfare Program (CWP)	Volume 3 - 467
94	04	0604011D8Z	Next Generation Information Communications Technology (5G)	Volume 3 - 479
95	04	0604016D8Z	Department of Defense Corrosion Program	Volume 3 - 501
98	04	0604124D8Z	Chief Digital and Artificial Intelligence Officer (CDAO) - MIP	Volume 3 - 511
99	04	0604125D8Z	Advanced Manufacturing Components and Prototypes	Volume 3 - 519
101	04	0604250D8Z	Advanced Innovative Technologies	Volume 3 - 527
102	04	0604294D8Z	Trusted and Assured Microelectronics	Volume 3 - 547

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
103	04	0604331D8Z	Rapid Prototyping Program	Volume 3 - 601
105	04	0604341D8Z	Defense Innovation Unit (DIU) Prototyping	Volume 3 - 621
106	04	0604400D8Z	Department of Defense (DoD) Unmanned Systems Common Development	Volume 3 - 635
108	04	0604555D8Z	Operational Energy Capability Improvement - Non S&T	Volume 3 - 655
109	04	0604669D8Z	Microelectronics Commons	Volume 3 - 679
110	04	0604682D8Z	Wargaming & Support for Strategic Analysis (SSA)	Volume 3 - 687
111	04	0604775D8Z	Defense Rapid Innovation Program	Volume 3 - 695
112	04	0604790D8Z	Rapid Defense Experimentation Reserve (RDER)	Volume 3 - 701
113	04	0604791D8Z	Multi-Domain Joint Operations (MDJO)	Volume 3 - 715
122	04	0604924D8Z	High Energy Laser Advanced Component Development & Prototype	Volume 3 - 723
129	04	0305245D8Z	Intelligence Capabilities and Innovation Investments	Volume 3 - 729
132	04	0901579D8Z	Office of Strategic Capital (OSC)	Volume 3 - 735

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
134	05	0604123D8Z	Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities	Volume 3 - 745

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
135	05	0604133D8Z	Alpha-1 Development Activities	Volume 3 - 785
136	05	0604161D8Z	Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability	Volume 3 - 793
138	05	0604771D8Z	Joint Tactical Information Distribution System (JTIDS)	Volume 3 - 807
142	05	0605022D8Z	Defense Exportability Features (DEF) Program	Volume 3 - 819
143	05	0605027D8Z	OUSD(C) IT Development Initiative	Volume 3 - 827
146	05	0605210D8Z	Defense-Wide Electronic Procurement Capabilities	Volume 3 - 837
147	05	0605294D8Z	Trusted and Assured Microelectronics	Volume 3 - 843
148	05	0605649D8Z	Acquisition Integration and Interoperability (AI2)	Volume 3 - 869
149	05	0605755D8Z	Radiological and Nuclear Defense Modernization System Dev/Demo	Volume 3 - 875
150	05	0605772D8Z	Nuclear Command Control and Communications (NC3)	Volume 3 - 883
151	05	0305304D8Z	DoD Enterprise Energy Information Management (EEIM)	Volume 3 - 891
152	05	0305310D8Z	Counterproliferation Advanced Development	Volume 3 - 905
153	05	0505167D8Z	Domestic Preparedness Against Weapons Of Mass Destruction	Volume 3 - 915

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
155	06	0604122D8Z	JADC2 Development and Experimentation Activities	Volume 3 - 923
156	06	0604774D8Z	Defense Readiness Reporting System (DRRS)	Volume 3 - 927
157	06	0604875D8Z	Joint Systems Architecture Development	Volume 3 - 931
158	06	0604940D8Z	Central Test and Evaluation Investment Program (CTEIP)	Volume 3 - 941
159	06	0604942D8Z	Assessments Evaluations	Volume 3 - 953
160	06	0604944D8Z	Assessments and Evaluations, DoD	Volume 3 - 955
162	06	0605100D8Z	Joint Mission Environment Test Capability (JMETC)	Volume 3 - 957
164	06	0605128D8Z	Classified Program USD(P)	Volume 3 - 969
165	06	0605142D8Z	Systems Engineering	Volume 3 - 971
166	06	0605151D8Z	Studies and Analysis Support – OSD	Volume 3 - 983
167	06	0605161D8Z	Nuclear Matters-Physical Security	Volume 3 - 987
168	06	0605170D8Z	Support to Networks and Information Integration (NII)	Volume 3 - 999
169	06	0605200D8Z	General Support to OUSD(Intelligence and Security)	Volume 3 - 1003
174	06	0605502D8Z	Small Business Innovation Research/Small Business Technology Transfer (SBIR/ STTR)	Volume 3 - 1009
177	06	0605711D8Z	Critical Technology Analysis	Volume 3 - 1013

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
178	06	0605790D8Z	Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR)	Volume 3 - 1017
179	06	0605797D8Z	Maintaining Technology Advantage	Volume 3 - 1021
180	06	0605798D8Z	Defense Technology Analysis	Volume 3 - 1037
183	06	0605804D8Z	Development Test & Evaluation	Volume 3 - 1051
186	06	0606005D8Z	Special Activities	Volume 3 - 1065
187	06	0606100D8Z	Budget and Program Assessments	Volume 3 - 1067
188	06	0606114D8Z	Support for Analysis Working Group	Volume 3 - 1073
189	06	0606135D8Z	Chief Digital and Artificial Intelligence Officer (CDAO) Activities	Volume 3 - 1077
190	06	0606225D8Z	ODNA Technology & Resource Analysis	Volume 3 - 1083
191	06	0606300D8Z	Defense Science Board	Volume 3 - 1087
192	06	0606301D8Z	Aviation Safety Technologies	Volume 3 - 1091
193	06	0606771D8Z	Cyber Resiliency & Cybersecurity Policy	Volume 3 - 1095
194	06	0606774D8Z	Defense Civilian Training Corps	Volume 3 - 1107
195	06	0606775D8Z	Joint Production Accelerator Cell (JPAC)	Volume 3 - 1111
197	06	0203345D8Z	Defense Operations Security Initiative (DOSI)	Volume 3 - 1115

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
211	07	0604011D8Z	Next Generation Information Communications Technology (5G)	Volume 3 - 1119
213	07	0607162D8Z	ChemBio Weapons Elimination Technology Improvement	Volume 3 - 1125
214	07	0607210D8Z	Industrial Base Analysis and Sustainment Support	Volume 3 - 1135
215	07	0607310D8Z	Counterproliferation Modernization	Volume 3 - 1159
218	07	0607757D8Z	Radiological and Nuclear Defense Modernization Operational System Development	Volume 3 - 1167
230	07	0303140D8Z	Information Systems Security Program	Volume 3 - 1175
242	07	0305104D8Z	Defense Industrial Base (DIB) Cyber Security Initiative	Volume 3 - 1183
249	07	0305172D8Z	Combined Advanced Applications	Volume 3 - 1189
252	07	0305186D8Z	Policy R&D Programs	Volume 3 - 1195
253	07	0305199D8Z	Net Centricity	Volume 3 - 1205
260	07	0305245D8Z	Intelligence Capabilities and Innovation Investments	Volume 3 - 1215
263	07	0305387D8Z	Homeland Defense Technology Transfer Program	Volume 3 - 1221
274	07	0505167D8Z	Domestic Prepare Against WMD	Volume 3 - 1227

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
292	08	0608648D8Z	Acquisition Visibility - Software Pilot Program	Volume 3 - 1235

Program Element Table of Contents (Alphabetically by Program Element Title)

Program Element Title	Program Element Number	Line #	BA	Page
Acquisition Integration and Interoperability (AI2)	0605649D8Z	148	05	Volume 3 - 869
Acquisition Visibility - Software Pilot Program	0608648D8Z	292	08	Volume 3 - 1235
Advanced Innovative Analysis and Concepts	0603289D8Z	45	03	Volume 3 - 205
Advanced Innovative Technologies	0604250D8Z	101	04	Volume 3 - 527
Advanced Manufacturing Components and Prototypes	0604125D8Z	99	04	Volume 3 - 519
Advanced Technical Integration	0603379D8Z	49	03	Volume 3 - 235
Alpha-1 Development Activities	0604133D8Z	135	05	Volume 3 - 785
Applied Research for the Advancement of S&T Priorities	0602251D8Z	14	02	Volume 3 - 61
Assessments Evaluations	0604942D8Z	159	06	Volume 3 - 953
Assessments and Evaluations, DoD	0604944D8Z	160	06	Volume 3 - 955
Aviation Safety Technologies	0606301D8Z	192	06	Volume 3 - 1091
Basic Research Initiatives	0601110D8Z	4	01	Volume 3 - 5
Budget and Program Assessments	0606100D8Z	187	06	Volume 3 - 1067
Central Test and Evaluation Investment Program (CTEIP)	0604940D8Z	158	06	Volume 3 - 941
ChemBio Weapons Elimination Technology Improvement	0607162D8Z	213	07	Volume 3 - 1125
Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities	0604123D8Z	134	05	Volume 3 - 745
Chief Digital and Artificial Intelligence Officer (CDAO) - MIP	0604124D8Z	98	04	Volume 3 - 511

Program Element Title	Program Element Number	Line #	BA	Page
Chief Digital and Artificial Intelligence Officer (CDAO) Activities	0606135D8Z	189	06	Volume 3 - 1077
Classified Program USD(P)	0605128D8Z	164	06	Volume 3 - 969
Coalition Warfare Program (CWP)	0603923D8Z	93	04	Volume 3 - 467
Combating Terrorism Technology Support	0603122D8Z	32	03	Volume 3 - 121
Combined Advanced Applications	0305172D8Z	249	07	Volume 3 - 1189
Counterproliferation Advanced Development	0305310D8Z	152	05	Volume 3 - 905
Counterproliferation Modernization	0607310D8Z	215	07	Volume 3 - 1159
Critical Technology Analysis	0605711D8Z	177	06	Volume 3 - 1013
Cyber Resiliency & Cybersecurity Policy	0606771D8Z	193	06	Volume 3 - 1095
Cyber Security Research	0602668D8Z	18	02	Volume 3 - 67
Defense Civilian Training Corps	0606774D8Z	194	06	Volume 3 - 1107
Defense Exportability Features (DEF) Program	0605022D8Z	142	05	Volume 3 - 819
Defense Industrial Base (DIB) Cyber Security Initiative	0305104D8Z	242	07	Volume 3 - 1183
Defense Innovation Acceleration (DIA)	0603838D8Z	67	03	Volume 3 - 311
Defense Innovation Unit (DIU)	0603342D8Z	47	03	Volume 3 - 219
Defense Innovation Unit (DIU) Prototyping	0604341D8Z	105	04	Volume 3 - 621
Defense Operations Security Initiative (DOSI)	0203345D8Z	197	06	Volume 3 - 1115
Defense Rapid Innovation Program	0604775D8Z	111	04	Volume 3 - 695
Defense Readiness Reporting System (DRRS)	0604774D8Z	156	06	Volume 3 - 927

Program Element Title	Program Element Number	Line #	BA	Page
Defense Science Board	0606300D8Z	191	06	Volume 3 - 1087
Defense Technology Analysis	0605798D8Z	180	06	Volume 3 - 1037
Defense Technology Innovation (Beyond 5G)	0602230D8Z	12	02	Volume 3 - 41
Defense Wide Manufacturing Science and Technology Program	0603680D8Z	55	03	Volume 3 - 263
Defense-Wide Electronic Procurement Capabilities	0605210D8Z	146	05	Volume 3 - 837
Department of Defense (DoD) Unmanned Systems Common Development	0604400D8Z	106	04	Volume 3 - 635
Department of Defense Corrosion Program	0604016D8Z	95	04	Volume 3 - 501
Development Test & Evaluation	0605804D8Z	183	06	Volume 3 - 1051
Distributed Learning Advanced Technology Development	0603769D8Z	65	03	Volume 3 - 301
DoD Enterprise Energy Information Management (EEIM)	0305304D8Z	151	05	Volume 3 - 891
Domestic Prepare Against WMD	0505167D8Z	274	07	Volume 3 - 1227
Domestic Preparedness Against Weapons Of Mass Destruction	0505167D8Z	153	05	Volume 3 - 915
Environmental Security Technology Certification Program (ESTCP)	0603851D8Z	77	04	Volume 3 - 455
FSRM Modeling	0602891D8Z	27	02	Volume 3 - 101
Foreign Comparative Testing	0603133D8Z	33	03	Volume 3 - 147
General Support to OUSD(Intelligence and Security)	0605200D8Z	169	06	Volume 3 - 1003
High Energy Laser Advanced Component Development & Prototype	0604924D8Z	122	04	Volume 3 - 723
High Energy Laser Advanced Development	0603924D8Z	68	03	Volume 3 - 353
High Energy Laser Research	0602890D8Z	26	02	Volume 3 - 93

Program Element Title	Program Element Number	Line #	BA	Page
High Energy Laser Research Initiatives	0601108D8Z	3	01	Volume 3 - 1
Historically Black Colleges and Universities and Minority-Serving Institutions	0601228D8Z	7	01	Volume 3 - 23
Homeland Defense Technology Transfer Program	0305387D8Z	263	07	Volume 3 - 1221
Industrial Base Analysis and Sustainment Support	0607210D8Z	214	07	Volume 3 - 1135
Information Systems Security Program	0303140D8Z	230	07	Volume 3 - 1175
Intelligence Capabilities and Innovation Investments	0305245D8Z	129	04	Volume 3 - 729
Intelligence Capabilities and Innovation Investments	0305245D8Z	260	07	Volume 3 - 1215
International Innovation Initiatives	0603945D8Z	70	03	Volume 3 - 391
JADC2 Development and Experimentation Activities	0604122D8Z	155	06	Volume 3 - 923
Joint DoD-DoE Munitions Technology Development	0603225D8Z	40	03	Volume 3 - 191
Joint Electronic Advanced Technology	0603618D8Z	52	03	Volume 3 - 241
Joint Hypersonic Technology Development & Transition	0603183D8Z	39	03	Volume 3 - 183
Joint Mission Environment Test Capability (JMETC)	0605100D8Z	162	06	Volume 3 - 957
Joint Munitions Advanced Technology	0603000D8Z	29	03	Volume 3 - 105
Joint Munitions Technology	0602000D8Z	9	02	Volume 3 - 31
Joint Production Accelerator Cell (JPAC)	0606775D8Z	195	06	Volume 3 - 1111
Joint Systems Architecture Development	0604875D8Z	157	06	Volume 3 - 931
Joint Tactical Information Distribution System (JTIDS)	0604771D8Z	138	05	Volume 3 - 807
Joint Warfighting Program (JWP)	0603727D8Z	60	03	Volume 3 - 297

Program Element Title	Program Element Number	Line #	BA	Page
Lincoln Laboratory Research Program	0602234D8Z	13	02	Volume 3 - 47
Maintaining Technology Advantage	0605797D8Z	179	06	Volume 3 - 1021
Microelectronics Commons	0602669D8Z	19	02	Volume 3 - 73
Microelectronics Commons	0603669D8Z	54	03	Volume 3 - 255
Microelectronics Commons	0604669D8Z	109	04	Volume 3 - 679
Mission Engineering and Integration (ME&I)	0603142D8Z	34	03	Volume 3 - 171
Multi-Domain Joint Operations (MDJO)	0604791D8Z	113	04	Volume 3 - 715
National Defense Education Program (NDEP)	0601120D8Z	6	01	Volume 3 - 15
National Security Innovation Capital	0603021D8Z	30	03	Volume 3 - 113
National Security Innovation Network	0603950D8Z	71	03	Volume 3 - 401
Net Centricity	0305199D8Z	253	07	Volume 3 - 1205
Networked Communications Capability	0603662D8Z	53	03	Volume 3 - 249
Next Generation Information Communications Technology (5G)	0604011D8Z	94	04	Volume 3 - 479
Next Generation Information Communications Technology (5G)	0604011D8Z	211	07	Volume 3 - 1119
Nuclear Command Control and Communications (NC3)	0605772D8Z	150	05	Volume 3 - 883
Nuclear Matters-Physical Security	0605161D8Z	167	06	Volume 3 - 987
Nuclear and Conventional Physical Security Equipment RDT&E ACD&P	0603161D8Z	75	04	Volume 3 - 423
Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability	0604161D8Z	136	05	Volume 3 - 793
ODNA Technology & Resource Analysis	0606225D8Z	190	06	Volume 3 - 1083

Program Element Title	Program Element Number	Line #	BA	Page
OUSD(C) IT Development Initiative	0605027D8Z	143	05	Volume 3 - 827
Office of Strategic Capital (OSC)	0901579D8Z	132	04	Volume 3 - 735
Operational Energy Capability Improvement (OECI)	0604055D8Z	72	03	Volume 3 - 407
Operational Energy Capability Improvement - Non S&T	0604555D8Z	108	04	Volume 3 - 655
Policy R&D Programs	0305186D8Z	252	07	Volume 3 - 1195
Promotion and Protection Strategies	0602128D8Z	11	02	Volume 3 - 37
Quantum Application	0603330D8Z	46	03	Volume 3 - 211
Radiological and Nuclear Defense Modernization Operational System Development	0607757D8Z	218	07	Volume 3 - 1167
Radiological and Nuclear Defense Modernization System Dev/Demo	0605755D8Z	149	05	Volume 3 - 875
Rapid Defense Experimentation Reserve (RDER)	0604790D8Z	112	04	Volume 3 - 701
Rapid Prototyping Program	0604331D8Z	103	04	Volume 3 - 601
Retract Larch	0603527D8Z	51	03	Volume 3 - 237
SO/LIC Advanced Development	0603121D8Z	31	03	Volume 3 - 117
Science and Technology (S&T) Analytic Assessments	0603288D8Z	44	03	Volume 3 - 195
Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR)	0605790D8Z	178	06	Volume 3 - 1017
Small Business Innovation Research/Small Business Technology Transfer (SBIR/ STTR)	0605502D8Z	174	06	Volume 3 - 1009
Social Sciences for Environmental Security	0602675D8Z	20	02	Volume 3 - 79
Software Engineering Institute (SEI)	0603781D8Z	66	03	Volume 3 - 305

Program Element Title	Program Element Number	Line #	BA	Page
Software Engineering Institute (SEI) Applied Research	0602751D8Z	25	02	Volume 3 - 85
Special Activities	0606005D8Z	186	06	Volume 3 - 1065
Strategic Environmental Research and Development Program (SERDP)	0603716D8Z	58	03	Volume 3 - 289
Studies and Analysis Support – OSD	0605151D8Z	166	06	Volume 3 - 983
Support for Analysis Working Group	0606114D8Z	188	06	Volume 3 - 1073
Support to Networks and Information Integration (NII)	0605170D8Z	168	06	Volume 3 - 999
Systems Engineering	0605142D8Z	165	06	Volume 3 - 971
Technology Innovation	0603375D8Z	48	03	Volume 3 - 229
Test and Evaluation Science and Technology	0603941D8Z	69	03	Volume 3 - 357
Trusted and Assured Microelectronics	0604294D8Z	102	04	Volume 3 - 547
Trusted and Assured Microelectronics	0605294D8Z	147	05	Volume 3 - 843
WALKOFF	0603600D8Z	76	04	Volume 3 - 449
Wargaming & Support for Strategic Analysis (SSA)	0604682D8Z	110	04	Volume 3 - 687

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601108D8Z / *High Energy Laser Research Initiatives*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	19.708	20.789	16.329	16.518	-	16.518	16.867	17.218	17.594	17.946	Continuing	Continuing
108: *Joint Directed Energy Basic Research*	19.708	20.789	16.329	16.518	-	16.518	16.867	17.218	17.594	17.946	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to defend the homeland, deter aggression and prevail in conflict, and build sustainable and long-term advantage.

This program focuses on fundamental science supporting future directed-energy technologies divided into (1) directed energy sources and (2) beam control and propagation. As a result, this program provides fundamental scientific knowledge to support future Department of Defense directed energy weapon systems. This program funds multi-disciplinary research institutes through the Joint Directed Energy Transition Office to conduct research on high energy laser and high power microwave technologies. Additionally, this program supports research efforts with academia to stimulate student interest in directed energy and encourage graduate research in topics related to high energy laser and high power microwave technologies. Efforts in this program have been coordinated through the Department of Defense Science and Technology Executive Committee process to harmonize efforts and eliminate duplication.

This program supports scientific study directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	20.789	16.329	16.652	-	16.652
Current President's Budget	20.789	16.329	16.518	-	16.518
Total Adjustments	0.000	0.000	-0.134	-	-0.134
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustment	0.000	-	-0.134	-	-0.134

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601108D8Z / *High Energy Laser Research Initiatives*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 108: *Joint Directed Energy Basic Research*		
Congressional Add: *High Energy Laser Research*	5.000	-
Congressional Add Subtotals for Project: 108	5.000	-
Congressional Add Totals for all Projects	5.000	-

Change Summary Explanation

A reduction of $0.167 million was applied to meet DoD overall funding reductions, which was spread to mitigate impact.

The increase of $0.033 is due to economic assumptions

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Directed Energy Foundational Research	15.789	16.329	16.518

Description: Improve the fundamental understanding and modeling of high energy laser and high power microwave sources and devices. Improve the fundamental understanding and modeling of beam control technologies as they relate to high energy laser applications and high power microwaves. Conduct research in atmospheric characterization, metrology, control systems, algorithms, waveguides, antennas and beam control component technology.

FY 2024 Plans:

- Investigate innovative laser technologies that show potential in power scalability for high energy laser applications, alternative defense capabilities, counter capabilities, and counter-counter capabilities. Monitor national and international efforts to leverage technology advancements. Conduct foundational research on laser technologies to gain more understanding on scalability and utility.

- Investigate innovative microwave technologies, in microwave sources, antennas, and related microwave component technologies. Perform overseas efforts to leverage international microwave technology advancements. Continue the investigation into innovative high power microwave technologies.

- Investigate innovative high energy laser beam control phenomenology and methods of measuring, modeling, and manipulating laser beam propagation. Investigate high power microwave antenna architectures with potential to revolutionize performance. Leverage international research developments and technology advancements where possible.

FY 2025 Plans:

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601108D8Z / *High Energy Laser Research Initiatives*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Investigate innovative laser technologies that show potential in power scalability for high energy laser applications. Monitor national and international efforts to leverage technology advancements. Conduct foundational research on laser technologies to gain more understanding on scalability and utility. - Investigate innovative microwave technologies that show potential in power scalability for high power microwave applications. Monitor national and international efforts to leverage technology advancements. Conduct foundational research on microwave technologies to gain more understanding on scalability and utility. - Investigate innovative beam control phenomenology and methods of measuring, modeling, and manipulating laser and microwave beam propagation. Investigate high energy laser and high power microwave architectures with the potential to revolutionize performance. Leverage international research developments and technology advancements where possible. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.156 million between FY 2024 and FY 2025 reflects an inflationary adjustment.			
Accomplishments/Planned Programs Subtotals	15.789	16.329	16.518

	FY 2023	FY 2024
Congressional Add: High Energy Laser Research ***FY 2023 Accomplishments:*** Funds will be used to establish a Directed Energy Center of Excellence under the Joint Directed Energy Transition Office to conduct basic research in high energy lasers and high power microwaves.	5.000	-
Congressional Adds Subtotals	5.000	-

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

NA

E. Acquisition Strategy

NA

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601110D8Z / *Basic Research Initiatives*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	90.518	71.783	77.132	-	77.132	81.172	85.502	87.422	89.170	Continuing	Continuing
010: *Basic Research Initiatives*	0.000	42.931	6.665	20.398	-	20.398	22.264	23.340	24.873	25.370	Continuing	Continuing
016: *Minerva Research Initiative*	0.000	17.143	17.013	17.053	-	17.053	17.250	17.537	17.923	18.281	Continuing	Continuing
060: *Vannevar Bush Faculty Fellowship*	0.000	30.444	48.105	39.681	-	39.681	41.658	44.625	44.626	45.519	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

Basic research is a process of exploration and discovery, yielding disruptive, non-incremental advances that can improve or radically change military capabilities, strategy, and operations, towards realizing overwhelming technology advantage against competitors. It is a mission-oriented activity that provides the Department of Defense (DoD) with a deep and broad awareness of research areas to explore and invest in. These areas span a wide range of fundamental physical sciences (e.g., chemistry, biology, materials, mathematics, computer science, social science, etc.) as well as fundamental research in engineering sciences that can catalyze the emergence of new technologies at scale (e.g., new materials or information systems). Basic research generates the critical technical knowledge that enables the ideation, design and realization of future DoD capabilities, including the exploration of new concepts of warfare. Basic research also sustains the scientific and engineering communities and creates new generations of a talented workforce that can support the DoD for the next decades. The Basic Research Initiatives Program includes programs and pilots designed to accomplish these objectives. It includes three broad projects: Basic Research Initiatives; The Minerva Research Initiative; and the Vannevar Bush Faculty Fellowship program.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	93.673	71.783	77.753	-	77.753
Current President's Budget	90.518	71.783	77.132	-	77.132
Total Adjustments	-3.155	0.000	-0.621	-	-0.621
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.146	-			
• Program Adjustments	-0.009	-	-0.778	-	-0.778

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601110D8Z / *Basic Research Initiatives*

• Economic Assupmtions	-	-	0.157	-	0.157

Congressional Add Details ($ in Millions, and Includes General Reductions)

	FY 2023	FY 2024
Project: 010: *Basic Research Initiatives*		
Congressional Add: *Defense Experimental Program to Stimulate Competitive Research (DEPSCoR)*	18.558	-
Congressional Add: *Central American Open Source Research Initiative and Coalition*	1.300	-
Congressional Add: *Global Competition Analysis Net Assessment*	10.000	-
Congressional Add Subtotals for Project: 010	29.858	-
Congressional Add Totals for all Projects	29.858	-

Change Summary Explanation

A reduction of $0.778 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.157 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 1	R-1 Program Element (Number/Name) PE 0601110D8Z / *Basic Research Initiatives*	Project (Number/Name) 010 / *Basic Research Initiatives*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
010: *Basic Research Initiatives*	0.000	42.931	6.665	20.398	-	20.398	22.264	23.340	24.873	25.370	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Basic Research Initiatives Project supports oversight of basic research throughout the Department, as well as initiatives and pilot programs, in order to create conditions for defense basic research investments to produce high-payoff, transformative scientific breakthroughs for the Department. The project supports the five Basic Research Office (BRO) strategic goals: (1) support the modernization priorities set by the Office of the Secretary of Defense (OSD); (2) coordinate and conduct oversight of DoD-wide basic research programs; (3) improve the science and engineering workforce and public outreach; (4) enhance university-industry and university-government collaboration; and (5) engage with the academic research community and international partners. This Project includes Strategic Support for Basic Research (SSBR), which sustains the operations of the BRO and creates conditions for research policies and initiatives to be formulated and instantiated. It also includes several pilot programs and initiatives, including international research collaboration, and cross-agency joint programs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Strategic Support for Basic Research (SSBR)	6.073	6.665	20.398

Description: SSBR is the core of the Basic Research Initiatives Project. It supports the operations of the Basic Research Office in the oversight of basic research, implementation of policies, and other activities to create and optimize the necessary conditions for defense basic research investments to produce high-payoff, transformative scientific breakthroughs for the Department. It provides essential support to accomplish the priorities of the BRO.

FY 2024 Plans:

Continue studies of the effectiveness of past DoD investments and high priority basic research in advancing new technologies and new capabilities for the Nation. Continue to analyze university-related business practices for improvement and efficiency and support for scientific expertise to oversee science and engineering initiatives. Continue to support Future Directions Workshops (FDW) for evaluating the visionary opportunities and challenges in scientific fields of importance to the Department, and other workshops aimed at generating cross-agency strategies to enhance university-government-industry collaborations, as well as with our international partners. Support the new multi-University AI research center, co-funded and jointly supervised with NSF.

FY 2025 Plans:

The FY 2025 budget continues the scope of activities performed during FY 2024 in support of basic research (SSBR), and extends them to include: 1) the Bilateral Academic Research Initiative (BARI) program to leverage intellectual and laboratory capabilities in allied and partner nations and enhance the breadth and depth of selected basic research directions in areas of high importance for future DoD missions; 2) a Socio-Mathematics (SOMA) program, designed to discover and develop revolutionary and fundamental approaches to the understanding and prediction of human social behavior at multiple scales; 3) Other pilot programs aimed at enhancing discovery of scientific breakthroughs, workforce development and university-government or university-industry engagements, or fundamental research towards the creation of revolutionary manufacturing capabilities and

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 1	**R-1 Program Element (Number/Name)** PE 0601110D8Z / *Basic Research Initiatives*	**Project (Number/Name)** 010 / *Basic Research Initiatives*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
infrastructure. These pilot programs lay down the foundations for knowledge creation and exploration of new S&T strategic directions and capabilities. The BARI program will start four new strategic projects in FY 2025: one with Finland on future wireless communication technology and architecture; one with South Korea (ROK) on autonomous soft robotics with new, enabling materials and sensors; two on quantum algorithms, respectively with the UK and Australia, the first joint academic research projects for AUKUS-Pillar 2. Other BARI projects will be investigated and negotiated in FY 2025. Starting in FY 2025, the SOMA program will broaden research in mathematical, computer and physical and social sciences to enable the development of future analytical and predictive tools to support asymmetric and irregular warfare. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $13.733 million between FY 2024 and FY 2025 includes a realignment of $11.178 million from the Vannevar Bush Faculty Fellowship project to continue the international Bilateral Academic Research Initiative (BARI) program and an increase of $2.555 million to extend the Socio-Math (SOMA) program and create new pilot programs targeting DoD Science & Technology (S&T) priorities.			
Title: Vannevar Bush Faculty Fellowship (VBFF) Program Increase ***Description:*** The VBFF Program ensures the DoD has a research portfolio that supports highly creative, innovative, and productive university researchers. The objectives of the program are to: (1) support scientific research that may lead to extraordinary outcomes of relevance to the DoD; (2) educate and train students and post-doctoral researchers for the defense and national security workforce; (3) foster long-term relationships between university researchers and the Department; (4) familiarize select university researchers and their students with DoD's current and future challenges through research and engagement with DoD-employed scientists; and (5) increase the number of exceptionally talented technical experts contributing to the DoD's mission. This $2.961 million in FY 2023 restores the program to the desired size for a sustainable contribution to the DoD mission, reflected in the 060 budget starting in FY 2025.	7.000	-	-
Accomplishments/Planned Programs Subtotals	13.073	6.665	20.398

	FY 2023	FY 2024
Congressional Add: Defense Experimental Program to Stimulate Competitive Research (DEPSCoR) ***FY 2023 Accomplishments:*** The increased funding will allow the Department to continue to support research collaboration and capacity building awards to academic researchers addressing DoD research problems. It will also allow the Department to increase outreach efforts to university researchers in underrepresented states.	18.558	-
Congressional Add: Central American Open Source Research Initiative and Coalition	1.300	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 1	**R-1 Program Element (Number/Name)** PE 0601110D8Z / *Basic Research Initiatives*	**Project (Number/Name)** 010 / *Basic Research Initiatives*

	FY 2023	FY 2024
FY 2023 Accomplishments: The OUSD(R&E) Basic Research Office is finalizing a research plan for FY 2023 to set the direction of this funding increase reflecting the intent by Congress.		
Congressional Add: Global Competition Analysis Net Assessment ***FY 2023 Accomplishments:*** The OUSD(R&E) Basic Research Office is finalizing a research plan for FY 2023 to set the direction of this funding increase reflecting the intent by Congress. A solicitation is being developed that will competitively select a consortium to conduct the required analysis activities. The consortium will also produce reports to be used by policymakers to assess global tech competition in two basic research topic areas (TBD).	10.000	-
Congressional Adds Subtotals	29.858	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 1	R-1 Program Element (Number/Name) PE 0601110D8Z / *Basic Research Initiatives*	Project (Number/Name) 016 / *Minerva Research Initiative*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
016: *Minerva Research Initiative*	0.000	17.143	17.013	17.053	-	17.053	17.250	17.537	17.923	18.281	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Minerva Research Initiative supports social science research aimed at improving our basic understanding of security, broadly defined. All supported projects are university-based and unclassified, with the intention that all work be shared widely to support thriving stable and safe communities. The goal is to improve DoD's basic understanding of the social, cultural, behavioral, and political forces that shape regions of the world of strategic importance to the U.S.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Minerva Research Initiative (MRI)	17.143	17.013	17.053

Description: The Minerva Research Initiative includes three primary components: (1) a university-based social science basic research grant program, funded in partnership with Air Force and Navy University Research Initiatives; (2) the Defense Education and Civilian University Research (DECUR) Partnership program for professional military education (PME) institutions; and (3) a collaboration with the Congressionally-established USIP to award research support to advanced graduate students and early career scholars working on security and peace. All components contribute to Minerva's goals of revitalizing connections between the DoD and academic social science communities and building cultural and foreign area knowledge on topics ranging from China-Russia great power competition, National Defense Strategy (NDS) strategic priorities, to geopolitical power projection strategies in a multi-polar world. This deeper scientific understanding will provide a more informed basis to shape doctrine, analysis, and other strategic and operational decisions made by war planners and warfighters.

FY 2024 Plans:

Plans for FY 2024 are similar in scope to those in FY 2023 and will ensure the sustainment of the university-based social science basic research program, Defense Education and Civilian University Research (DECUR) partnership program, and the congressionally established United States Institute of Peace (USIP) research awards for early career peace and security scholars. In addition, funding will support outreach activities that build trusted networks between the DoD and academic social science communities, and ensure new scientific knowledge is discoverable. Starting in FY 2024, the Army will join the existing partnership with the Air Force and Navy University Research Initiatives in the funding of university-based basic research in social science (no impact on this PE funding).

FY 2025 Plans:

Minerva will support research on understanding the social, cultural, behavioral, economic, and political context in which DoD operates. This includes: 1) university grants for social science basic research; 2) grants for University-Professional Military Education (PME) collaborative research under the Defense Education and Civilian University Research (DECUR) partnership program; 3) continue collaboration with the operational community on all issues for which it has developed expertise among the social science community; 4) help implement the DoD plan for social, management, and information sciences as guided in the

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 1	**R-1 Program Element (Number/Name)** PE 0601110D8Z / *Basic Research Initiatives*	**Project (Number/Name)** 016 / *Minerva Research Initiative*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2021 NDAA Sec. 220; 5) continue collaboration with the congressionally established United States Institute of Peace (USIP) in supporting advanced doctoral students pursuing research on DoD topics of interest. In addition, funding will support outreach activities that build trusted networks between the DoD and academic social science communities, and study the development of standardized databases to ensure new scientific knowledge is discoverable and transferrable. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.040 million from FY 2024 and FY 2025 is the result of minor budget fluctuations.			
Accomplishments/Planned Programs Subtotals	17.143	17.013	17.053

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 1	R-1 Program Element (Number/Name) PE 0601110D8Z / *Basic Research Initiatives*	Project (Number/Name) 060 / *Vannevar Bush Faculty Fellowship*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
060: *Vannevar Bush Faculty Fellowship*	0.000	30.444	48.105	39.681	-	39.681	41.658	44.625	44.626	45.519	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Vannevar Bush Faculty Fellowship (VBFF) program supports world-class researchers in scientific areas of critical importance to the DoD and ensures the cultivation of exceptional talent. Fellows' research spans a broad set of emerging scientific areas with transformative potential, including Quantum Information Science, Novel Engineered Materials, Cognitive Neuroscience and human-machine interfaces, Engineering Biology, Applied and Computational Mathematics, Networks, Machine Learning and Artificial Intelligence, Manufacturing Science, and others. The program delivers the most innovative and transformational scientific ideas of relevance to the DoD, from the top scientists in the Nation. The program fosters close connections between academia and the defense science and engineering (S&E) enterprise, a primary goal of Strategic Support for Basic Research (SSBR) efforts. Fellows provide the Department the deep scientific expertise from today's leading research universities and collaborate with defense scientists and engineers. This program actively engages and coordinates basic research across the Department.

The project includes support for the Laboratory-University Collaboration Initiative (LUCI) program, which is designed to team scientists in the DoD laboratories with top academic researchers from the programs sponsored or overseen by the Office of the Secretary of Defense (in particular, the VBFF fellows), in order to collaboratively perform basic research on a topic of their choice. Three-year grants allow a deep exchange of ideas between academic and DoD research communities, bring the most recent scientific breakthroughs closer to DoD relevance, and greatly expand the skills and knowledge of the S&E workforce within the laboratories.

The project also supports the Bush Fellows Research Study Team (BRFST) program, designed to allow selected leaders in the academic research community to engage with the DoD at high levels, including briefings from MAJCOMs and site visits to military installations. This program brings deeper understanding of military operations and strategic vision to selected US academic researchers, in order to enhance the creation of out-of-the-box, innovative solutions and the growth of intellectual talent attuned to DoD mission needs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Vannevar Bush Faculty Fellowship (VBFF) Program	30.444	41.105	39.681
Description: The Vannevar Bush Faculty Fellowship (VBFF) Program ensures the DoD has a research portfolio that supports highly creative, innovative, and productive university researchers. The objectives of the program are to: (1) support scientific research that may lead to extraordinary outcomes of relevance to the DoD; (2) educate and train students and post-doctoral researchers for the defense and national security workforce; (3) foster long-term relationships between university researchers and the Department; (4) familiarize select university researchers and their students with DoD's current and future challenges through research and engagement with DoD-employed scientists; and (5) increase the number of exceptionally talented technical experts contributing to the DoD's mission.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 1	**R-1 Program Element (Number/Name)** PE 0601110D8Z / *Basic Research Initiatives*	**Project (Number/Name)** 060 / *Vannevar Bush Faculty Fellowship*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Supported 46 Vannevar Bush Fellows and collaborative research efforts with 27 Laboratory-University Collaboration Initiative (LUCI) Fellows from DoD Service Laboratories. Reviewed and updated research topic areas with input from DoD S&T community. Organized and executed a competition to select a new class of Vannevar Bush Fellows. Organized and executed the Vannevar Bush annual meeting, along with science communication training. Organized and conducted site visits to establish communication with new Vannevar Bush Fellows and explain the program objectives and opportunities. Organized and executed a competition for the LUCI program. Conducted review of LUCI projects in DoD laboratories and reported the scientific progress and impacts. ***FY 2024 Plans:*** The FY 2024 budget continues the programs initiated in FY 2023, which will allow for the expansion and acceleration of transition and leverage of scientific expertise towards the DoD mission capability. It continues execution of the Bush Fellows Research Study Team (BRFST) program, to completion in FY 2024. ***FY 2025 Plans:*** FY 2025 will continue selection and funding of classes for the Vannevar Bush Faculty Fellowship (VBFF) program and the Laboratory University Collaboration Initiative (LUCI) program. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $1.424 million from FY 2024 to FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.			
Title: Research Grant Programs ***Description:*** Enhance VBFF program and expand International Multidisciplinary University Research Initiative/Bilateral Academic Research Initiative (MURI/BARI). ***FY 2024 Plans:*** This FY 2024 funding will: 1) expand the number of LUCI and VBFF fellows to recover a regular program size that provides the most effective contribution to DOD-relevant basic research and its transition to the DOD laboratories; 2) initiate an enhanced international BARI engagement to leverage unique talent and laboratory capabilities with partner nations; 3) instantiate a continuation of the multi-disciplinary academic research program for the predictive modeling of complex social behavior (SOMA), a seed program funded under a FY 2020 Congressional Add (Cyber Research). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $7.000 million between FY 2024 and FY 2025 is due to a realignment of funds to the Basic Research Initiatives project to support the BARI and SOMA programs.	-	7.000	-
Accomplishments/Planned Programs Subtotals	30.444	48.105	39.681

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 1	**R-1 Program Element (Number/Name)** PE 0601110D8Z / *Basic Research Initiatives*	**Project (Number/Name)** 060 / *Vannevar Bush Faculty Fellowship*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601120D8Z / *National Defense Education Program (NDEP)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	168.539	159.549	169.986	-	169.986	180.518	183.674	187.049	190.790	Continuing	Continuing
120: *National Defense Education Program (NDEP)*	0.000	168.539	159.549	169.986	-	169.986	180.518	183.674	187.049	190.790	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build Sustainable and Long-Term Advantage and Taking Care of People.

The National Defense Education Program (NDEP): (1) Fosters and enhances the Department of Defense's (DoD) ability to develop and access high-quality science, technology, engineering, and mathematics (STEM) talent vital to national defense, now and in the future; (2) Is executed by the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)); (3) Aligned to the Federal STEM Strategy, the NDEP addresses critical STEM education and talent development challenges using a continuous learning structure and evidence-based approaches; (4) Activities align with the Department's vision of a diverse STEM talent pool readily accessible to serve our Nation and evolve the Department's competitive edge; (5) DoD STEM and NDEP activities engage in assessment and evaluation practices as outlined by the Office of Management and Budget and the Government Accountability Office; and (6) Aligns to the DoD science, technology, engineering, and mathematics (STEM) Strategy in support of the National Defense Strategy and the DoD science and technology (S&T) modernization priorities.

Specifically, the NDEP is part of the broader Department-wide effort under DoD STEM, which works collectively with partners from academia, industry non-profit organizations, defense laboratories, and other government entities to: (1) build strong foundations for STEM literacy; (2) increase diversity, equity, and inclusion in STEM; and (3) prepare the STEM workforce of the future.

NDEP activities further support the DoD STEM effort in providing authentic learning experiences through a variety of education and outreach initiatives in the form of scholarships, internships, enrichment activities, competitions, and mentorships by leveraging partners from industry, academia, and other government organizations with a shared STEM mission. The DoD STEM programs span across all age groups, including kindergarten through twelfth grade (K-12) students and teachers and postsecondary, undergraduate, and graduate students.

The NDEP's portfolio includes: the Science, Mathematics, and Research for Transformation (SMART) program; STEM Education and Outreach efforts including the Defense STEM Education Consortium (DSEC); and specific Congressionally directed programs, to include the Manufacturing Engineering Education Program (MEEP) and broader NDEP funding opportunities in STEM education and workforce development. The SMART program awards highly competitive scholarships-for-service to undergraduate and graduate students in 24 STEM academic disciplines and hires the students, upon graduation, into DoD's workforce. As part of the SMART experience, scholars engage in internships that allow for relevant hands-on research and work experiences in DoD facilities, thereby enhancing their educational experience.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601120D8Z / *National Defense Education Program (NDEP)*

SMART ensures the Department has a steady infusion of high-quality technical talent, prepared in areas of critical importance, and ready to apply their technical knowledge, skills, and abilities to fulfill the DoD mission. Since its inception in FY 2005, SMART has awarded approximately 4,700 scholarships to students pursuing undergraduate and graduate degrees. To date, nearly 3,000 students have completed their academic pursuit and transitioned into DoD employment with over 1,000 more currently pursuing their Science, Mathematics, and Research for Transformation (SMART)-funded degree. Over 2,000 participants have successfully completed the program through their DoD Service commitment.

The National Defense Education Program (NDEP) will continue to support the preparation of dependents of members of the armed forces for careers in Science, Technology, Education, and Math (STEM) as enacted under 10 USC 2192(b) in FY 2020.

STEM education and outreach activities and awardees through NDEP will continue to engage military connected students in collaboration with the Department of Defense Education Activity (DoDEA).

Additionally, where feasible, NDEP activities will also support the Supporting Veterans in STEM Careers Act, enacted in FY 2020. Science, technology, engineering, and mathematics (STEM) Education and Outreach is a multitude of cohesive and coordinated activities for PreK-16 students, teachers, and schools, especially those for underrepresented and underserved communities, to include military connected students. In March 2019, the Defense STEM Education Consortium (DSEC) was established to facilitate these efforts.

The DSEC is a consortium model approach that leverages a collaborative ecosystem/partnership between academia, industry, not-for-profit organizations, and government that aims to broaden STEM literacy and develop a diverse and agile workforce to power the United States' innovative defense infrastructure. The DSEC is a five-year, $89.000 million investment, which comprises a diverse consortium of program partners and is designed to leverage evidence-based approaches to inspire and develop the U.S. science and technology future workforce. Finally, the DSEC is designed to evolve over time and has built-in Innovation Bloc (IB) funding which allows the consortium to address emerging issues in STEM education and potential gaps within the portfolio.

The DoD consistently seeks innovative scientific and technological solutions to address current and future military requirements. The Manufacturing Engineering Education Program (MEEP) will enhance existing or establish new education programs (or collection of programs), to better position the current and next generation manufacturing workforce to produce military systems and components that assure technological superiority for the Department.

The Biotechnology Education Program (BIOTECH) will establish new educational programs that align with BIOTECH Modernization priorities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601120D8Z / *National Defense Education Program (NDEP)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	174.347	159.549	171.357	-	171.357
Current President's Budget	168.539	159.549	169.986	-	169.986
Total Adjustments	-5.808	0.000	-1.371	-	-1.371
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.791	-			
• Program Adjustments	-0.017	-	-1.714	-	-1.714
• Economic Assumptions	-	-	0.343	-	0.343

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 120: *National Defense Education Program (NDEP)*		
Congressional Add: *SMART Diversification Activities*	1.933	-
Congressional Add: *Civil Society*	14.500	-
Congressional Add: *Manufacturing Engineering Education Program (MEEP)*	14.500	-
Congressional Add: *World Language Advancement and Readiness*	9.667	-
Congressional Add Subtotals for Project: 120	40.600	-
Congressional Add Totals for all Projects	40.600	-

Change Summary Explanation

A reduction of $1.714 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.343 million in FY 2025 for Economic Assumptions.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Workforce Development - Science, Mathematics, and Research for Transformation (SMART) Defense Education Program	100.440	131.658	143.577
Description: SMART is a scholarship-for-service program that provides support to high performing U.S. graduate and undergraduate students in 24 academic science, technology, engineering, and mathematics (STEM) disciplines identified as areas of future workforce priorities for the DoD. SMART Scholars receive full tuition, a stipend, allotments for books and			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601120D8Z / *National Defense Education Program (NDEP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
health insurance, internships at a sponsoring DoD laboratory or agency, and guaranteed employment with the DoD upon degree completion. Students fulfill a one-for-one service commitment to the Department as a civilian employee for every year of scholarship provided. The disciplines awarded to align with the Department's Science and Technology (S&T) priorities and emerging scientific research areas, such as: Aeronautical and Astronautical Engineering; Biomedical Engineering; Biosciences; Chemical Engineering; Chemistry; Civil Engineering; Cognitive, Neural, and Behavioral Sciences; Computer Science and Engineering; Cybersecurity; Data Science; Electrical Engineering; Environmental Sciences; Geosciences; Industrial and Systems Engineering; Information Sciences; Materials Science and Engineering; Mathematics; Mechanical Engineering; Naval Architecture and Ocean Engineering; Nuclear Engineering; Oceanography; Operations Research; Physics; and Software Engineering. Upon completion of their degree, students fulfill a service commitment to the Department on a one-to-one payback per year of education funded. Since FY 2005, the Science, Mathematics, and Research for Transformation (SMART) program has awarded approximately 4,700 scholarships to scholars engaging with 211 sponsoring facilities across the entire DoD, including the Army, Navy, Air Force and other DoD agencies. Over 90% of the participants have successfully completed, or are on track to complete, both their SMART-funded degree pursuit and their DoD employment agreement. Oversight of the SMART program falls under the purview of Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) with execution at the Component level. Two types of individuals participate in the program: (1) retention scholars who are current DoD employees; and (2) recruitment scholars who are students enrolled in undergraduate and graduate programs and represent new technical expertise for the Department. Internships provide Science, Mathematics, and Research for Transformation (SMART) scholars with the opportunity to engage in the DoD science and technology enterprise through research and work experiences in defense laboratories, thereby enhancing their educational experience and understanding the relevance of DoD research priority areas. Oversight of the SMART program falls under the purview of Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) with execution at the Component level. ***FY 2024 Plans:*** • Award 450-500 new scholars (projected). • Continue strategic HBCU/MI initiative to increase diversity of the applicant pool and awareness of research and STEM initiatives that meet DoD Component and Laboratory mission needs and the modernization priority areas.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601120D8Z / *National Defense Education Program (NDEP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Conduct an annual forum for current and prospective DoD sponsoring facilities (SFs) to highlight SMART program benefits, share best practices, and enhance technical engagement with scholars, HBCU/MIs, and OSD leadership. • Continue to optimize SMART Information Management System (SIMS) to identify process efficiencies in data collection, communication, and virtual engagement with scholars, SFs, SMART Advisory Council, program office and support staff. • Increase SEED research grant awards to scholars who have pursued a PhD through the Science, Mathematics, and Research for Transformation (SMART) program and are currently in the service commitment phase of their scholarship. ***FY 2025 Plans:*** • Continue FY 2024 efforts. • Continue expansion of the SMART Diversity Initiative per the Sections 242 and 250 of the National Defense Authorization Act (NDAA) for FY 2021 by expanding strategic recruiting partnerships with affinity groups, non-profits, and academic institutions focused on serving underrepresented students in Science, Technology, Engineering, and Mathematics (STEM). • Increase Awards to 525-575 to meet DoD sponsoring facility demand. • Increase the number of awards for the SMART SEED grant. • Expand the SMART Creative Research and Engineering Advancing Technical Equity in STEM (CREATES) grant to support SMART scholar graduates of and collaborations with historically Black colleges and universities, minority institutions, or minority serving institutions in alignment with the SMART Diversity Initiative and Sections 242 and 250 of the NDAA for FY 2021. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $11.919 million will increase the number of SMART scholarships awarded in FY 2025 by 75-125 to 525-575 total scholarships to help meet the Department of Defense STEM workforce needs. It will also provide for a 25% increase in the number of SMART SEED and CREATES grant awards.			
Title: Science, Technology, Engineering, and Mathematics (STEM) Education and Outreach	25.566	25.891	24.409
Description: The STEM Education and Outreach activities provides learners and educators across the pre-K to 16+ continuum unique experiences aimed to inspire, cultivate, and develop exceptional STEM talent poised to tackle evolving defense technological challenges.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601120D8Z / *National Defense Education Program (NDEP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In order to build a workforce that solves national defense needs and challenges, the DoD recognizes the necessity for increased participation of underserved groups in STEM activities and education programs. Investments are made to promote participation in national-level STEM programs and initiatives and provide authentic learning experiences for students and teachers across the globe. STEM Education and Outreach activities are aligned to the Department's STEM Strategic Plan, support the Federal STEM Education Strategic Plan, and enable the Department to have enduring access to STEM talent, now and into the future. ***FY 2024 Plans:*** • Continue to provide STEM Education and Outreach activities with emphasis on authentic hands-on experiences to students and teachers and evaluate the effectiveness of the increased outreach. • Continue to leverage Defense STEM Education Consortium (DSEC) partnerships, STEM ecosystems, and other government partnerships to amplify awareness and broaden reach. • Continue to participate in inter- and intra-departmental collaboration with stakeholders to achieve Federal and DoD STEM objectives. • Continue the experience of DoD supported STEM education and outreach opportunities to reach all populations, through consideration of the barriers faced by underserved and underrepresented populations. • Publish a five-year report on establishing baseline metrics and reporting on EAC efforts across the Department. ***FY 2025 Plans:*** • Continue strategic partnerships and collaboration under the Defense STEM Education Consortium to inspire and develop talent as early as K-12 and empower educators to provide meaningful STEM learning experiences. • Continue to cultivate and incentivize Components' innovative approaches to STEM talent development through intramural activities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $1.482 million is due to an anticipated reduction in costs under a new DSEC cooperative agreement award for the base year of the award.			
Title: Biotechnology (BIOTECH) Education Program	1.933	2.000	2.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601120D8Z / *National Defense Education Program (NDEP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: In order to build a Biotechnology Education Program (BIOTECH) workforce that solves national defense needs and challenges, the DoD recognizes the importance of supporting domestic programs that motivate young people to pursue education and career opportunities in biotechnology. ***FY 2024 Plans:*** Support DoD and Federal STEM Education Strategy and Department's BIOTECH Roadmap in building biotechnology literacy, diversity and inclusion and developing the future biotech workforce. ***FY 2025 Plans:*** Continue to support DoD and Federal STEM Education Strategy and Department's BIOTECH Roadmap in building biotechnology literacy, diversity and inclusion in developing the future biotech workforce. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change in FY 2025.			
Accomplishments/Planned Programs Subtotals	127.939	159.549	169.986

	FY 2023	FY 2024
Congressional Add: SMART Diversification Activities ***FY 2023 Accomplishments:*** The program will continue to support the requirements of Sections 242 and 250 of the FY 2021 NDAA and the Department's strategic goals in Diversity, Equity, Inclusion, and Accessibility. Funding will be executed under the SMART cooperative agreement award to increase the number of scholarship awards, establish incentivized strategic partnerships with HBCU/MIs and affinity groups, and/or support new program initiatives to support historically underrepresented scholars during their service commitment phase. These efforts lend to the SMART Program's strategic goal of diversifying the applicant and award pools, which will ultimately diversify the Department's technical talent needed to address critical technologies now and in the future.	1.933	-
Congressional Add: Civil Society ***FY 2023 Accomplishments:*** Publish an open competition under the NDEP Broad Agency Announcement to identify, award, and work with universities with ethics and public affairs programs to promote civil society education and outreach, including among military and non-military communities.	14.500	-
Congressional Add: Manufacturing Engineering Education Program (MEEP)	14.500	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601120D8Z / *National Defense Education Program (NDEP)*

	FY 2023	FY 2024
FY 2023 Accomplishments: Publish an open competition under the NDEP Broad Agency Announcement to identify, award, and work with academia, industry, not-for-profit organization, local and/or state educational agencies to enhance existing programs in manufacturing engineering education to further the mission of the department; or the establishment of new programs in manufacturing engineering education as described under 10 U.S. Code 4843. Coordinate with DoD Manufacturing Technology Program's Education and Workforce Development, and the DoD Industrial Base Analysis and Sustainment.		
Congressional Add: World Language Advancement and Readiness ***FY 2023 Accomplishments:*** Subject effort will be re-allocated to the Department of Defense Education Activity (DoDEA). DoDEA has executed World Language grants in 2019 upon enactment of the World Language Advancement and Readiness Act.	9.667	-
Congressional Adds Subtotals	40.600	-

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601228D8Z *I Historically Black Colleges and Universities and Minority-Serving Institutions*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	96.858	100.467	99.792	-	99.792	99.907	99.998	100.099	102.101	Continuing	Continuing
448: *Historically Black Colleges and Universities and Minority-Serving Institutions*	-	96.858	100.467	99.792	-	99.792	99.907	99.998	100.099	102.101	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI) program provides support in fields of science and engineering that are important to national defense. The Department of Defense (DoD) HBCU/MI Program encourages participation of small minority schools and large minority research institutions. The program is authorized by 10 U.S.C. § 4144. This competitive program provides support through grants, cooperative agreements, or contracts for research, education assistance, and instrumentation purchases.

Work in this program provides a foundation to enhance participation of HBCUs/MIs in DoD research. Programs are structured to: build infrastructure; strengthen research and educational opportunities at HBCUs/MIs and increase the number of minority graduates in the science, technology, engineering, and mathematics (STEM) disciplines; and build a more diverse pool of scientists and engineers to meet future workforce needs.

The program includes funding for Centers of Excellence (COEs) established at HBCUs/MIs to focus on DoD science and technology priorities. Centers currently funded through cooperative agreements include Quantum Science, Fully Networked Command, Control, Communications, and Computer (C4), Artificial Intelligence/Machine Learning, Aerospace, Biotechnology, Materials Science, Renewable Energy, Future Wireless Technology, Advanced Computing and Software, and Integrated Sensors and Cyber. The Centers are administered by the Army Research Laboratory.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601228D8Z *I Historically Black Colleges and Universities and Minority-Serving Institutions*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	100.500	100.467	100.596	-	100.596
Current President's Budget	96.858	100.467	99.792	-	99.792
Total Adjustments	-3.642	0.000	-0.804	-	-0.804
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.632	-			
• Program Adjustments	-0.010	-	-1.006	-	-1.006
• Economic Assumptions	-	-	0.202	-	0.202

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 448: *Historically Black Colleges and Universities and Minority-Serving Institutions*		
Congressional Add: *HBCU/MI Program Increase*	66.712	-
Congressional Add: *Integrated Research and Training in Artificial Intelligence and Machine Learning for ROTC Students*	0.500	-
Congressional Add Subtotals for Project: 448	67.212	-
Congressional Add Totals for all Projects	67.212	-

Change Summary Explanation

A reduction of $1.006 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.202 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 1	R-1 Program Element (Number/Name) PE 0601228D8Z / *Historically Black Colleges and Universities and Minority-Serving Institutions*	Project (Number/Name) 448 / *Historically Black Colleges and Universities and Minority-Serving Institutions*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
448: *Historically Black Colleges and Universities and Minority-Serving Institutions*	-	96.858	100.467	99.792	-	99.792	99.907	99.998	100.099	102.101	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI) program provides support in fields of science and engineering that are important to national defense. The Department of Defense (DoD) HBCU/MI Program encourages participation of small minority schools and large minority research institutions. The program is authorized by 10 U.S.C. § 4144. This competitive program provides support through grants or contracts for research, education assistance, instrumentation purchases, and technical assistance as described below.

• Research: The research grants further knowledge in the basic scientific disciplines through theoretical and experimental activities. Collaborative research allows university professors to work directly with military laboratories or other universities.

• Education: Education assistance funds are used by minority institutions to strengthen their academic programs in science, technology, engineering, and mathematics (STEM), thereby increasing the number of under-represented minorities obtaining undergraduate and graduate degrees in these fields. These grants provide equipment, scholarships, cooperative work/study opportunities, visiting faculty programs, summer internship programs, and a variety of other enhancements designed to support students and to encourage them to pursue careers in STEM.

• Instrumentation purchases: The program allows universities to purchase basic laboratory equipment, such as lasers and spectrometers, for enhancements to the basic research efforts.

• Technical assistance: The funds are used to design programs that enhance the ability of minority institutions to successfully compete for future Defense funding by assisting the HBCU/MI community in areas such as proposal writing and administration of grants and contracts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI)	29.646	100.467	99.792
Description: The HBCU/MI program provides support for research, education, and collaboration with DoD facilities and personnel. The research grants further knowledge in the basic scientific and engineering disciplines through theoretical and empirical activities. Collaborative research allows university professors to work directly with DoD laboratories or other universities.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 1	**R-1 Program Element (Number/Name)** PE 0601228D8Z / *Historically Black Colleges and Universities and Minority-Serving Institutions*	**Project (Number/Name)** 448 / *Historically Black Colleges and Universities and Minority-Serving Institutions*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Conduct annual competition of the Historically Black Colleges and Minority-Serving Institutions (HBCU/MI) program for basic research, student support, and/or equipment/instrumentation. Continue research and educational collaboration with the DoD laboratories. Continue the summer internship and faculty fellowship programs. Continue Centers of Excellence in support of the Under Secretary of Defense for Research and Engineering (USD(R&E)) critical technology areas and the National Defense Strategy in the areas needed to expand Science, Technology, Engineering, and Mathematics (STEM) opportunities for underrepresented minorities. Conduct annual review of the Centers. Conduct outreach activities, to include one webinar and two technical assistance workshops to expose HBCUs/MIs to opportunities in the DoD. Maintain minority STEM recruitment efforts in partnership with the Science, Mathematics and Research for Transformation (SMART) Scholarship for Service Program as encouraged by Section 250 of the National Defense Authorization Act (NDAA) for FY 2021. Continue support of HBCU/MI Pilot Initiative with the SMART Scholarship Program to develop and train the next generation of STEM leaders. Encourage HBCU/MI students to apply for SMART scholarships through targeted outreach including joint webinars focused on fostering a community of diversity and the STEM workforce. Continue to examine recommendations provided by the National Academies of Sciences, Engineering, and Medicine (NASEM) in the report to Congress on defense research at HBCUs and other MIs as required by Section 262 of the NDAA for FY 2020. Support efforts for R-2 HBCUs/MIs with high potential to elevate research activity in science and engineering disciplines critical to the national security functions of DoD and attain R-1 status on the Carnegie Classification scale. Collaborate with the Air Force for the establishment of the first HBCU university affiliated research center in tactical autonomy to foster HBCU R-1 Research Classification and generate STEM scholar interest in DoD science and technology priorities. Collaborate with the Office of Naval Research (ONR) on STEM, education, and workforce programs to diversify the available pool of scientists and engineers available to DoD in critical technology areas. Team with ONR to expand fellowship programs that engage HBCU/MI faculty in DoD research, including both the 10-week Summer Fellows program and the Distinguished Fellows Program supporting appointments ranging from one semester to one year. Collaborate with the Air Force Research Laboratory Minority Leaders Program to assist HBCUs/MIs in developing both the research and contracting skills necessary to compete for DoD research opportunities. Issue two discrete funding opportunities for basic research awards and equipment awards to increase research and educational capability of HBCUs/MIs. Expand the HBCU/MI internship program to increase basic research ecosystem of additional underrepresented minorities pursuing STEM disciplines important to national defense. Provide funding supplement to the multidisciplinary university research initiative (MURI) program specifically for HBCU/MI participation in defense research and to strengthen collaboration between university teams proposing MURI projects. Establish a center of excellence focusing on DoD S&T critical technology area to strengthen HBCU/MI involvement in defense research activities.			
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 1	**R-1 Program Element (Number/Name)** PE 0601228D8Z / *Historically Black Colleges and Universities and Minority-Serving Institutions*	**Project (Number/Name)** 448 / *Historically Black Colleges and Universities and Minority-Serving Institutions*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Conduct annual competition of the HBCU/MI program for basic research, student support, and/or equipment/instrumentation. Continue research and educational collaboration with the DoD laboratories. Continue the summer internship and faculty fellowship programs. Continue Centers of Excellence in support of the Under Secretary of Defense for Research and Engineering (USD(R&E)) critical technology areas and the National Defense Strategy in the areas needed to expand Science, Technology, Engineering, and Mathematics (STEM) opportunities for underrepresented minorities. Conduct annual review of the Centers. Conduct outreach activities, to include one webinar and two technical assistance workshops to expose Historically Black Colleges and Minority-Serving Institutions (HBCU/MIs) to opportunities in the DoD. Maintain minority STEM recruitment efforts in partnership with the Science, Mathematics and Research for Transformation (SMART) Scholarship for Service Program as encouraged by Section 250 of the National Defense Authorization Act (NDAA) for FY 2021. Continue to examine and implement recommendations provided by the National Academies of Sciences, Engineering, and Medicine (NASEM) in the report to Congress on defense research at HBCUs and other MIs as required by Section 262 of the NDAA for FY 2020. Support efforts for R-2 HBCUs/MIs with high potential to elevate research activity in science and engineering disciplines critical to the national security functions of DoD and attain R-1 status on the Carnegie Classification scale. Continue collaboration with the Air Force for the sustainment of the first HBCU university affiliated research center at Howard University in tactical autonomy to foster HBCU R-1 Research Classification and generate STEM scholar interest in DoD science and technology priorities. Collaborate with the Office of Naval Research (ONR) on STEM, education, and workforce programs to diversify the available pool of scientists and engineers available to DoD in critical technology areas. Team with ONR to expand fellowship programs that engage HBCU/MI faculty in DoD research, including both the 10-week summer Fellows program and the Distinguished Fellows Program supporting appointments ranging from one semester to one year. Collaborate with the Air Force Research Laboratory Minority Leaders Program to assist HBCUs/MIs in developing both the research and contracting skills necessary to compete for DoD research opportunities. Issue two discrete funding opportunities for basic research awards and equipment awards to increase research and educational capability of HBCUs/MIs. Expand the HBCU/MI internship program to increase basic research ecosystem of additional underrepresented minorities pursuing STEM disciplines important to national defense. Continue funding supplement to support HBCU/MI participation in the Multidisciplinary University Research Initiative (MURI) program on defense research topics and to strengthen collaboration between university teams proposing MURI projects. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $0.675 million between FY 2024 and FY 2025 will result in a reduction of two research grants awarded to HBCUs/MIs through the annual research and education funding opportunity. Although the $0.675 million decrease will impact the number of grant awards provided to the universities, the remaining program funds still allow DoD to conduct the annual research and education program for grants supporting research and instrumentation.			
Accomplishments/Planned Programs Subtotals	29.646	100.467	99.792

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 1	**R-1 Program Element (Number/Name)** PE 0601228D8Z / *Historically Black Colleges and Universities and Minority-Serving Institutions*	**Project (Number/Name)** 448 / *Historically Black Colleges and Universities and Minority-Serving Institutions*

	FY 2023	FY 2024
Congressional Add: HBCU/MI Program Increase	66.712	-
FY 2023 Accomplishments: Issue two discrete funding opportunities for basic research awards and equipment awards to increase research and educational capability of HBCUs/MIs. Continue research and educational collaboration with the DoD laboratories. Continue the summer internship and faculty fellowship programs. Continue Centers of Excellence in support of the USD(R&E) critical technology areas and the National Defense Strategy in the areas needed to expand STEM opportunities for underrepresented minorities. Conduct annual review of the Centers. Conduct outreach activities, to include one webinar and two technical assistance workshops to expose HBCUs/MIs to opportunities in the DoD. Maintain minority STEM recruitment efforts in partnership with the Science, Mathematics and Research for Transformation (SMART) Scholarship for Service Program as encouraged by Section 250 of the NDAA for FY 2021. Continue support of HBCU/MI Pilot Initiative with the SMART Scholarship Program to develop and train the next generation of STEM leaders. Encourage HBCU/MI students to apply for SMART scholarships through targeted outreach including joint webinars focused on fostering a community of diversity and the STEM workforce. Continue to examine recommendations provided by the National Academies of Sciences, Engineering, and Medicine (NASEM) in the report to Congress on defense research at HBCUs and other MIs as required by Section 262 of the NDAA for FY 2020. Continue efforts for R-2 HBCUs/MIs with high potential to elevate research activity in science and engineering disciplines critical to the national security functions of DoD and attain R-1 status on the Carnegie Classification scale. Continue collaboration with the Air Force for the establishment of the first HBCU university affiliated research center (UARC) in tactical autonomy to foster HBCU R-1 Research Classification and generate STEM scholar interest in DoD science and technology priorities. Collaborate with the Office of Naval Research (ONR) on STEM, education, and workforce programs to diversify the available pool of scientists and engineers available to DoD in critical technology areas. Team with ONR to expand fellowship programs that engage HBCU/MI faculty in DoD research, including both the 10-week Summer Fellows program and the Distinguished Fellows Program supporting appointments ranging from one semester to one year. Continue to collaborate with the Air Force Research Laboratory Minority Leaders Program to assist HBCUs/MIs in developing both the research and contracting skills necessary to compete for DoD research opportunities. Expand the HBCU/MI internship program to increase basic research ecosystem of additional underrepresented minorities pursuing STEM disciplines important to national defense. Provide funding supplement to the multidisciplinary university research initiative (MURI) program specifically for HBCU/MI participation in defense research and to strengthen		

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 1	**R-1 Program Element (Number/Name)** PE 0601228D8Z / *Historically Black Colleges and Universities and Minority-Serving Institutions*	**Project (Number/Name)** 448 / *Historically Black Colleges and Universities and Minority-Serving Institutions*

	FY 2023	FY 2024
collaboration between university teams proposing MURI projects. Establish centers of excellence focusing on DoD S&T critical technology areas to strengthen HBCU/MI involvement in defense research activities.		
Congressional Add: Integrated Research and Training in Artificial Intelligence and Machine Learning for ROTC Students ***FY 2023 Accomplishments:*** Funding will be used to increase STEM opportunities, collaboration, and training for HBCU/MI ROTC scholars to advance their skills in DoD critical technology areas. Funding will be used to increase ROTC students' research and training in AI/ML supporting the research activity at the Center of Excellence (COE) in Big Data Analytics established at Prairie View A&M University as stipulated in the Division C Defense Appropriations (requested by Rep. Michael McCaul (R-TX)). The execution is aligned with the objectives of the Big Data COE to increase students' competency in big data and AI/ML disciplines. The funding is consistent with DoD's continued partnership with the COE and the Department's goal of diversifying STEM education and workforce initiatives.	0.500	-
Congressional Adds Subtotals	67.212	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602000D8Z / *Joint Munitions Technology*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	22.665	19.157	19.373	-	19.373	19.792	20.206	20.645	21.056	Continuing	Continuing
076: *Enhanced Munitions*	-	22.665	19.157	5.812	-	5.812	5.937	6.062	6.194	6.317	Continuing	Continuing
355: *Energetics Technology*	-	0.000	0.000	13.561	-	13.561	13.855	14.144	14.451	14.739	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to build sustainable and long-term technology advantages to solve operational and mission-focused challenges.

The Joint Enhanced Munitions Technology Program (JEMTP), within the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) was established to develop and demonstrate joint munitions enhancing technologies (energetics, warheads, propulsion systems, advanced lethality mechanisms, fuzes and fuze components, and target detection to provide future kinetic fires capabilities to ensure advantage for U.S. warfighters. The program's plans and investments are informed by threat-opportunity based analyses from Joint Force campaign scenarios. The JEMTP activities within Program Element 0602000D8Z are executed under two Project Codes: 076 - Enhanced Munitions and 355 – Energetics Technologies.

Project Code 076 - The Enhanced Munitions Project continues focus on technology investments on novel fuzing, power sources, target detection sensing technologies, and counter-countermeasure technologies that are vital to combine with Energetics Technologies Project investments to enhance future munitions range/speed, lethality and survivability.

Project Code 355 - In FY 2025, the program will execute the Energetics Technology project to focus on investigation and research of energetic materials (ingredients and formulations) with the goals of enhancing munitions capability and addressing supply chain resilience. The Energetics Technology Project will collaborate with DoD and Services to develop and execute strategies and roadmaps for advanced energetics to conduct energetics material synthesis and formulation development; to accelerate the application and transition of advanced energetics materials into DoD munitions and the energetics manufacturing base; and to apply modern, agile energetics processing and manufacturing technologies.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602000D8Z / *Joint Munitions Technology*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	22.961	19.157	19.530	-	19.530
Current President's Budget	22.665	19.157	19.373	-	19.373
Total Adjustments	-0.296	0.000	-0.157	-	-0.157
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.294	-			
• Program Adjustments	-0.002	-	-0.196	-	-0.196
• Economic Assumptions	-	-	0.039	-	0.039

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 076: *Enhanced Munitions*		
Congressional Add: *Next Generation Explosives and Propellants*	2.000	-
Congressional Add: *Energetics Manufacturing Technology*	2.000	-
Congressional Add Subtotals for Project: 076	4.000	-
Congressional Add Totals for all Projects	4.000	-

Change Summary Explanation

The decrease of $0.196 million between FY 2024 and FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.039 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602000D8Z / *Joint Munitions Technology*	Project (Number/Name) 076 / *Enhanced Munitions*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
076: *Enhanced Munitions*	-	22.665	19.157	5.812	-	5.812	5.937	6.062	6.194	6.317	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Enhanced Munitions project investigates and develops cross-cutting enabling munitions technologies that are broadly applicable across service munitions. The project invests in enabling technologies in sensors, propulsion, warhead, and fuzing to demonstrate enhanced performance in future munitions.

In FY 2025 the Enhanced Munitions project continues to address other critical munitions technologies outside of advanced energetics that enable the Energetics Technology project investments to be effectively incorporated into munitions systems. Lethality increases are not only dependent on advanced energetics, but also optimized munitions placement and burst point optimization. Munitions investments in survivability against harsh environments and adversarial countermeasures are necessary to allow the munition to reach and prosecute its intended target.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Enhanced Munitions	18.665	19.157	5.812
Description: Project investments are derived from the operationally informed, Department of Defense Munitions S&T Strategic Priorities, focused on developing enabling technologies to enhance warhead lethality, propulsion performance, target detection and burst point control, and weapon survivability. Technologies under investigation applies machine learning and artificial intelligence for sensing and target recognition, bio-manufacturing of energetic ingredients and advanced energetic materials, and compositions that enable the next generation of kinetic weapons capabilities.			
FY 2024 Plans: - Complete rotating detonation engine enabling technology research though static firing test and transition this long range propulsion technology into advanced development. - Develop advanced propulsion solid fuels, thrust control technologies, variable nozzle technologies that will enhance U.S. missile range, speed and maneuverability. - Continue development of machine learning based target detection technologies to enhance lethality with focus on maritime targets. - Investigate advanced munitions energetics and non-energetics materials using novel and agile processing technologies for enhanced performance and survivability future weapons. - Improve energetic materials production and processing technologies to bolster supply chain and diversify energetic systems industrial base.			
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602000D8Z / *Joint Munitions Technology*	**Project (Number/Name)** 076 / *Enhanced Munitions*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Conduct development of Fast-Running Blast-on-Structure Lethality Models that reduce the uncertainty of lethality assessments and thus reduce over allocation of munitions in DoD weaponeering tools. - Complete testing of machine learning based target detection device to enhance missile lethality against maritime targets. - Conduct flight testing of dynamic trigger fuzing that optimizes warhead detonation point to optimize target defeat lethality. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $13.345 million between FY 2024 and FY 2025 reflects a realignment to the Energetics Technology Project Code 355 to focus on accelerating advanced energetics development.			
Accomplishments/Planned Programs Subtotals	18.665	19.157	5.812

	FY 2023	FY 2024
Congressional Add: Next Generation Explosives and Propellants ***FY 2023 Accomplishments:*** The Next Generation Explosives and Propellants project increase develops advanced energetic ingredients and consolidation methods at Virginia Polytechnic Institute & State University (Virginia Tech).	2.000	-
Congressional Add: Energetics Manufacturing Technology ***FY 2023 Accomplishments:*** The energetics manufacturing technology program increase will focus on maturing advanced manufacturing concepts that enable improvements in energetics manufacturing quality and capacity to bolster supply chain and diversify energetic systems industrial base and ultimately develop munitions with increase range and performance.	2.000	-
Congressional Adds Subtotals	4.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602000D8Z / *Joint Munitions Technology*	Project (Number/Name) 355 / *Energetics Technology*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
355: *Energetics Technology*	-	0.000	0.000	13.561	-	13.561	13.855	14.144	14.451	14.739	Continuing	Continuing

A. Mission Description and Budget Item Justification

U.S. weapons systems still largely rely on decades-old explosive and propellant technologies that limit Joint Force options to deter, and if necessary, defeat adversaries in conflict. The Energetics Technology project is established to expedite investigation, research, and transition of novel energetics materials, chemicals, and processes that will enable improvements in existing and future munitions performance. The investments and efforts will enable modern manufacturing processing and help to bolster U.S. energetics supply chain resiliency. The Joint Enhanced Munitions Technology Program (JEMTP), Services, and Office of the Under Secretary of Defense (OUSD) munitions stakeholder community will collaborate to generate technology roadmaps for advanced energetic research, development, including CL-20 compounds.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Energetics Technology	-	-	13.561

Description: Energetics Technology project investments are focused on advanced energetics ingredient development and formulation research focused on improving munitions propulsion and warhead performance. The project will leverage the energetics systems Public- Private-Partnership (PPP) Energetics Partnership Intermediary Consortium (EPIC) to facilitate and accelerate munitions technology development, demonstration, and transition.

Technology efforts include energetics development for high efficiency propellants, high performance explosives (e.g. enhanced blast, fragmentation, penetration, and underwater effects); using efficient, flexible, and adaptable processes; applying bio-technology developed critical energetics chemicals. Funded efforts are driven by program office, service, and operational needs as outlined and planned within the DoD Munitions S&T Strategic Priorities and cross-cutting technology gaps identified in advanced energetics roadmaps.

FY 2025 Plans:

Continue and expand development of advanced energetics for enhanced munition capability and improved industrial base capacity through novel processes and formulations through the following activities:

- Develop advanced underwater explosive formulation (UNDEX) and validate performance using optimized modeling and small-scale experimentation methodologies.
- Develop high performance advanced energetics formulations, including CL-20 for high performance propellants and explosives.
- Develop novel synthesized energetics materials required for advanced formulations.
- Develop advanced energetics materials using bio-technology and bio-industry derived sources.

FY 2024 to FY 2025 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602000D8Z / *Joint Munitions Technology*	**Project (Number/Name)** 355 / *Energetics Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The increase of $13.561 million between FY 2024 and FY 2025 reflects a realignment from the Enhanced Munitions project to place emphasis on research, testing and transition of energetics enabling technologies for munitions.			
Accomplishments/Planned Programs Subtotals	-	-	13.561

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602128D8Z / *Promotion and Protection Strategies*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	3.155	3.219	3.191	-	3.191	3.193	3.195	3.265	3.330	Continuing	Continuing
231: *Promotion and Protection Strategies*	0.000	3.155	3.219	3.191	-	3.191	3.193	3.195	3.265	3.330	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Promotion and Protection Strategies program executes activities providing visibility, fostering partnerships, incentivizing industry transition partners, and supporting developmental ecosystem as a nucleus of defense industrial base for biotechnology.

For the Manufacturing Enabled by Modular Bioindustrial and Reusable (MEMBR) assets initiative, the program will bring together the Acquisition (e.g., Program Executive Officers, Program Managers, technology warrant officers, etc.), Policy, and Research and Engineering communities to establish a Biotechnology Acquisition and Investment Coordination Effort (BAICE). The BAICE will ensure integration of innovative biomanufactured products into DoD's systems and platforms through holistic investment, research & development, and acquisition strategies.

The BAICE will create the Department's first coordinating body at DoD to centralize acquisition efforts for biotechnology. By providing visibility, fostering partnerships across DoD, and incentivizing industry transition partners, the BAICE will support a developmental ecosystem in which new technologies are not only pushed to higher budget activities from lower ones, but where personnel and industry partners at higher budget activities pull on technologies being developed at lower ones. This will serve as the nucleus of a defense industrial base for biotechnology that delivers innovative biomanufactured products into DoD's systems and platforms.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	3.275	3.219	3.217	-	3.217
Current President's Budget	3.155	3.219	3.191	-	3.191
Total Adjustments	-0.120	0.000	-0.026	-	-0.026
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.120	-			
• Program Adjustments	-	-	-0.032	-	-0.032

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602128D8Z / *Promotion and Protection Strategies*

• Economic Assumptions	-	-	0.006	-	0.006

Change Summary Explanation

A reduction of $0.032 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.006 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602128D8Z / *Promotion and Protection Strategies*	Project (Number/Name) 231 / *Promotion and Protection Strategies*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
231: *Promotion and Protection Strategies*	0.000	3.155	3.219	3.191	-	3.191	3.193	3.195	3.265	3.330	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Promotion and Protection Strategies program executes activities providing visibility, fostering partnerships, incentivizing industry transition partners, and supporting developmental ecosystem as a nucleus of defense industrial base for biotechnology.

For the Manufacturing Enabled by Modular Bioindustrial and Reusable (MEMBR) assets initiative, the program will bring together the Acquisition (e.g., Program Executive Officers, Program Managers, technology warrant officers, etc.), Policy, and Research and Engineering communities to establish a Biotechnology Acquisition and Investment Coordination Effort (BAICE). The BAICE will ensure integration of innovative biomanufactured products into DoD's systems and platforms through holistic acquisition and investment strategies.

The BAICE will create the Department's first coordinating body to centralize acquisition efforts for biotechnology. By providing visibility, fostering partnerships across DoD, and incentivizing industry transition partners, the BAICE will support a developmental ecosystem in which new technologies are not only pushed to higher budget activities from lower ones, but where personnel and industry partners at higher budget activities pull on technologies being developed at lower ones. This will serve as the nucleus of a defense industrial base for biotechnology that delivers innovative biomanufactured products into DoD's systems and platforms.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Biotechnology Acquisition and Investment Coordination Effort (BAICE)	3.155	3.219	3.191
Description: Ensure integration of biomanufactured products into DoD's systems and platforms through holistic investment, research and development and acquisition strategies.			
FY 2024 Plans: • Test identified acquisition pathways to incentivize industry and prime defense contractors to integrate bioproducts into the DoD supply chain. • Continue to identify capability gaps and opportunities for bioproducts to meet military requirements. • Partner with BioMADE to implement the strategy of building new pilot/industrial scale manufacturing facilities with an innovation center incorporated to facilitate partnership with the Department. • Establish and maintain metrics to measure success of implemented strategies based on quantitative results.			
FY 2025 Plans: • Test and identify pathways to increase domestic availability of critical cellulose for a more resilient energetics supply chain for DoD.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602128D8Z / *Promotion and Protection Strategies*	**Project (Number/Name)** 231 / *Promotion and Protection Strategies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Engage and collaborate with United States Department of Agriculture (USDA)on agriculturally derived cellulose sources. • Assess vulnerabilities in Biomanufacturing of critical chemicals that present logistical challenges in contested regions and austere environments. • Continue to sustain DoD Biotechnology subject matter experts that shape and manage Request for proposal(s)(RFPs) for a 5 year $1B+ DoD investment in modernizing non-pharmaceutical Biotechnology infrastructure, products, and services for the benefit of the warfighter. • Propose solutions to key identified barriers preventing wider adaptation of bioproducts (e.g., sustainable aviation fuels, feedstocks) within the DoD, and examine the logistical implications associated with adapting more bioproducts into DoD systems. • Map domestic and foreign biomanufacturing ecosystem and the changes that occur over time for identification and tracking of metrics to support future implementation and refinement of the DoD Biomanufacutring Strategy. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $0.028 million between FY 2024 and FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.			
Accomplishments/Planned Programs Subtotals	3.155	3.219	3.191

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602230D8Z / *Defense Technology Innovation (Beyond 5G)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	17.075	18.453	55.160	38.515	-	38.515	47.786	44.336	37.680	38.435	Continuing	Continuing
230: *Defense Technology Innovation (Beyond 5G)*	17.075	18.453	55.160	38.515	-	38.515	47.786	44.336	37.680	38.435	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build a Sustainable and Long-Term Advantage and Build a resilient Joint Force and Defense Ecosystem.

Today's mobile and tactical communications are stove-piped and limit the force from fully executing the JADC2 concepts of tomorrow. Warfighters require integrated network mission solutions utilizing 5G/FutureG technologies to support the future battle. Beyond 5G delivers unified solutions in mobile and tactical networks to give US DoD an asymmetric advantage. Through key strategically architected innovations being developed by Defense Technology Innovation (Beyond 5G), the future implementation and sustainability of current JADC2 concepts will be supported, enabling DoD to keep pace with warfighter capability requirements. The net benefit will be a reduction in the technical and tactical burden on DoD network operators via implementations of high performing mission solutions which are situationally aware and can rapidly and autonomously adapt to changing battlefield conditions.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	19.067	55.160	72.186	-	72.186
Current President's Budget	18.453	55.160	38.515	-	38.515
Total Adjustments	-0.614	0.000	-33.671	-	-33.671
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.612	-			
• Program Adjustments	-0.002	-	-33.749	-	-33.749
• Economic Assumption	-	-	0.078	-	0.078

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602230D8Z *I Defense Technology Innovation (Beyond 5G)*

Change Summary Explanation

Decrease of $33.749 million in FY 2025 is due to a reduction of $21.749 million applied to meet DoD overall funding reductions, which were spread to mitigate impact. Realignment of $12.000 million to match program's technical schedule. Funding increase of $0.078 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602230D8Z / *Defense Technology Innovation (Beyond 5G)*	Project (Number/Name) 230 / *Defense Technology Innovation (Beyond 5G)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
230: *Defense Technology Innovation (Beyond 5G)*	17.075	18.453	55.160	38.515	-	38.515	47.786	44.336	37.680	38.435	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Technology Innovation (Beyond 5G) effort builds upon the technology foundation that underpins fifth-generation / future generation (5G/FutureG) cellular network systems as a basis to create the next generation of wireless cellular network and security technologies for military applications. Working in concert with other U.S. Government science and technology agencies, Beyond 5G is successfully conducting applied research to adopt, adapt, advance, and integrate technologies to create asymmetric advantages. Our approach is to replace cost-prohibitive, single-function stovepipes that limit the force from fully executing the Joint All-Domain Command and Control (JADC2) concepts of tomorrow.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Beyond 5G	18.453	55.160	38.515

Description: In the domain of fifth generation / future generation (5G/FutureG) wireless networks, the warfighter requires complex system-of-systems solutions equipped with features and attributes unique to battlefield challenges. These solutions must be developed with DoD mission-level capability requirements at the foundation of the developmental process.

To address this need, Beyond 5G is inventing automated spectrum management solutions to fill technology gaps in an increasingly important area of DoD cooperation with civilian spectrum use, with specific attention to enabling coexistence between 5G/FutureG and military radars. Other technology areas being addressed include military unmanned aerial system 5G/FutureG payloads to enable deployment of high-performance tactical networks and solutions for secure interoperability between DoD and commercial networks to provide required flexibility and new defensive/offensive capabilities to our warfighters. In addition, Beyond 5G is driving targeted wireless innovations in open-source software, hardware, and standards to provide our soldiers a fully programmable network architecture. The resulting holistic end-to-end mission solution includes mobile end points, telecom base stations, tactical radios, network infrastructure and compute fabric for zero-touch deployments of fully automated DoD network systems. Under this approach, we enable the U.S. to regain leadership in future wireless technologies including sixth generation (6G) and beyond.

FY 2024 Plans:

Through ongoing projects and planned FY 2023 solicitations, DoD will respond to DoD 5G strategy doctrine by continuing to invest in applied research in next generation wireless cellular network and security technologies for military applications and by executing fellowship/training programs to grow national workforce capability in this critical technology domain.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602230D8Z / *Defense Technology Innovation (Beyond 5G)*	**Project (Number/Name)** 230 / *Defense Technology Innovation (Beyond 5G)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Additionally, DoD will continue ongoing contracts to invest in analytically oriented research efforts to support participation in the 3rd Generation Partnership Program (3GPP) standards process to evolve FutureG standards in dual-use directions that will benefit DoD missions and strategies. Continue executing projects awarded in FY 2023 in the following topic areas: 1. Dynamic spectrum management/engineering to improve the efficiency, reliability, resiliency, and dual-use coexistence of DoD operation of limited electromagnetic spectrum within frequency bands licensed for 5G and FutureG mobile telecom applications; 2. The use of mobile distributed multi-input multi-output schema and architectures to enable high-value operational mission CONOPS relying on mobile wireless ad-hoc tactical networks within operationally relevant DoD domains within which adversary interception and jamming can be pervasive (e.g., intra-/inter-squad and squad-to-command post networking, long range networking, terrestrial/airborne networking, etc.); 3. Exploitation of emerging 5G features such as open radio access networks, integrated access and backhaul, and non-terrestrial networks to enable a next generation of DoD tactical networks that integrate a commercial terrestrial 5G network with an airborne network segment in order to leverage the ubiquity and cost advantage of commercially available network infrastructure and user equipment for DoD mission benefit by servicing critical objectives such as autonomous, reliable, secure, and resilient low-latency operations. These areas of applied research link directly to DoD 5G strategy doctrine and have been instantiated in a portfolio of multi-phase programs being executed across a diverse set of industry, FFRDC, and academic performers. In FY 2024, this portfolio will be augmented with additional programs in the thrust areas above via new solicitations and contract actions, and current active programs will be funded for follow-on phase options where warranted by early phase execution excellence and the establishment of a strong value proposition requiring additional work and funding. In FY 2024, the Beyond 5G portfolio will also pursue applied research in next generation cellular network systems in three additional strategic technology development focus areas deemed to provide the potential for revolutionary improvements in next generation cellular network systems: 1. The development of Unlimited Software defined Radio (SDR) technologies which remove hardware and prior generation architectural and implementation constraints by enabling full programmability of wireless signal generation and control for spectrum dominance; 2. The development of Hyper-Dimensional Software Defined Networks (SDN) to enable autonomous management of wireless network operations in environments that will be required to accommodate far more heterogeneity in technologies than current constructs, mixing in numerous different wireless modalities across numerous disparate networks;			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602230D8Z / *Defense Technology Innovation (Beyond 5G)*	**Project (Number/Name)** 230 / *Defense Technology Innovation (Beyond 5G)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
3. The development of Mobile Internet Protocol advances such as time and location-aware protocols, named data networking, and next generation encryption schema which overcome limitations of current static internet protocols to support the dynamics and mobility required for low-power discriminating future DoD capabilities while improving operational security and resiliency. Through these developments, Beyond 5G will build a foundation for the technologies required to support US leadership in the global information infrastructure with embedded US principles and make the DoD more effective, more survivable, and improve readiness in the following ways: Unlimited SDR: - Benefit to the US: Tailored access to more wireless resources for new commercial markets - Benefit to the DoD: Improved spectrum management capabilities at all levels of DoD activities Hyper-Dimensional SDN: -Benefit to the US: Improved deployment models for public and private networks -Benefit to the DoD: Distributed and easy to maintain networks Mobile IP: -Benefit to the US: Lower power, improved performance; trusted, secure, and privacy-enhancing networks -Benefit to the DoD: Improved cyberspace capabilities; EMS and network signature management Building upon a well-established paradigm of program execution processes and controls, multi-phase programs added to the Beyond 5G portfolio in these applied research areas via FY 2023 solicitations will be managed to maximize the probability of beneficial outcomes. Collectively, the applied research focus areas described above represent a body of technology development that promises the evolutionary and revolutionary transformation of wireless cellular network systems which can enable enormous DoD mission benefit while also servicing DoD 5G Strategy dual-use objectives. In developing the applied research portfolio as described, Beyond 5G will continue to adapt the investment strategy and program mix based on the companion Prototyping and Experimentation testbed deployments, driving towards an integrated overall technology maturation process that maximizes the probability of successful technology transition into operations. ***FY 2025 Plans:*** Complete and continue research projects initiated in FY 2023 and FY 2024 with focus on technology transfer and transition commensurate with their technical progress. This includes projects that will establish the following capabilities: 1) Resilient and Open Commercial Solutions (Open 6G Development Environment andDynamic Spectrum Management) 2) Ubiquitous, Secure and Instant Access 3) Expeditionary and Tactical Military Use and 4) Integrated Sensing and Communications.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602230D8Z / *Defense Technology Innovation (Beyond 5G)*	**Project (Number/Name)** 230 / *Defense Technology Innovation (Beyond 5G)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Projects to be added to the portfolio support needed developments in the following technology focus areas: 1. FutureG for Resilient Logistics in Contested Environments is an emerging challenge. A key feature of contested environments is congested spectrum that can challenge the ability of automated systems to function. Beyond 5G is focusing on research approaches that improve the ability of these systems to operate in an adaptive and agile manner. The resulting asymmetric capability is to be integrated into a robust network architecture that supports sustainment and logistics from the point of origin to the point of need across the competition continuum. 2. Securing 5G/FutureG for Decision Advantage produces open-source software(OSS), such as the Open Radio Access Network (ORAN) Software Community and the Linux Foundation 5G Super Blueprint (SB), that will gain momentum and transition 5G mobile wireless networks to OSS alternatives. Beyond 5G's Open Centralized Unit Distributed Unit (OCUDU) initiative will develop solutions across Software, Hardware and Management domains which will: (1) provide a secure 5G OSS baseline to maintain information and decision advantage in a contested environment, and (2) provide an economically viable alternative for U.S. Allies and partners across the globe to proprietary technology. 3. Multi-site FutureG Experimentation enables an environment to: (1) foster the development of FutureG wireless communications technology for increased battlefield interoperability and ensure a skilled workforce, (2) support the development of new multi-domain operating concepts commensurate with emerging commercial spectrum requirements, and (3) build coalitions to influence the development of international wireless communications standards to U.S. advantage. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Beyond 5G is executing/developing a portfolio of applied research projects according to a defined strategic plan which are urgently required to meet short-term and long-term warfighter needs and to maintain or outpace the capabilities and strategic resolve of our adversaries. The $16.645 million decrease from FY 2024 to FY 2025 reflects a directed reduction that was applied to meet DoD overall funding benchmarks. Beyond 5G ideation, design, prototyping, and integration of novel 5G/FutureG network concepts and components will lead to operationalization of new mission capabilities architected to enable U.S. DoD operations to dominate the future contested networked battlespace, create an asymmetric advantage over our adversaries, and provide a foundation of communications for JADC2.			
Accomplishments/Planned Programs Subtotals	18.453	55.160	38.515

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	53.522	42.581	46.858	47.528	-	47.528	48.582	49.595	50.672	51.686	Continuing	Continuing
534: *Lincoln Laboratory*	50.022	38.956	43.204	43.900	-	43.900	44.873	45.809	46.807	47.744	Continuing	Continuing
815: *Cyber Security, Science and Engineering*	3.500	3.625	3.654	3.628	-	3.628	3.709	3.786	3.865	3.942	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiative to Build Sustainable and Long-Term Advantage.

The MIT Lincoln Laboratory (MIT LL) research program element is focused on advanced technology research and development effort conducted through a cost reimbursable contract with the Massachusetts Institute of Technology (MIT). The MIT LL project supports innovative, multi-disciplined research that addresses critical national security problems. The project funds innovations that directly lead to the development of new system concepts, technologies, components, and materials in support of Department of Defense (DoD) missions.

As of FY 2023, the project funds eight technology areas. Of the eight areas, four are core-technology areas, three are emerging-technology initiatives and one Integrated Systems technology area. The four core-technology areas are Advanced Devices; Optical Systems and Technology; Information, Computation and Exploitation Sciences, and Radio-Frequency (RF) Systems and Technologies. The three emerging-technology areas are Advanced Materials and Processes; Quantum System Sciences; and Autonomous Systems. The one Integrated Systems technology area focuses on combining novel component-level technologies to create system-level technology solutions for important DoD problems. These technology areas provide critical capabilities that support all DoD mission areas pursued at the Laboratory. The categories are selected in consultation with the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) aligned with the DoD Communities of Interest (CoIs), and with guidance from other DoD agencies to address technology as well as system needs. The research in these categories adapts to solve emerging DoD problems as well as long-standing problems to which new technology advances can be applied. The individual efforts in each area are selected with the goal of enhancing DoD capabilities significantly, rather than incrementally. Supporting these and other priority technology and capability areas are work efforts titled Cyber Security, Science and Engineering.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	45.844	46.858	47.911	-	47.911
Current President's Budget	42.581	46.858	47.528	-	47.528
Total Adjustments	-3.263	0.000	-0.383	-	-0.383
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.619	-			
• SBIR/STTR Transfer	-1.639	-			
• Program Adjustments	-0.005	-	-0.480	-	-0.480
• Economic Adjustments	-	-	0.097	-	0.097

Change Summary Explanation

A reduction of $0.480 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.097 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 2					R-1 Program Element (Number/Name) PE 0602234D8Z / *Lincoln Laboratory Research Program*				Project (Number/Name) 534 / *Lincoln Laboratory*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
534: *Lincoln Laboratory*	50.022	38.956	43.204	43.900	-	43.900	44.873	45.809	46.807	47.744	Continuing	Continuing

A. Mission Description and Budget Item Justification

This PE supports the long-term strategic technology capabilities within the DoD in established and emerging mission areas. Each year, MIT LL in coordination with the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) reviews and selects projects focusing on addressing technology gaps in critical problems facing national security. Factors considered in the selection include ability to accelerate development, have impact, and provide innovation in the DoD critical technology areas. Selection of projects derives from an annual, highly selective proposal process in which demand for funding exceeds supply by nearly a factor of three. Successful projects often result in advanced capabilities that lead to further sponsored-program development.

The Lincoln Laboratory (LL) research areas that comprise this overall research and development portfolio are described below.

Core-technology areas:

• Advanced Devices emphasizes the development of devices and subsystems utilizing microelectronic, photonic, biological, and chemical technologies to enable new approaches to DoD systems.

Efforts include technologies for high power Radio Frequency (RF) devices; multi-function, highly integrated lasers; fast and sensitive imagers; and mechanical microsystems for autonomous systems.

• Optical Systems and Technology focuses on developing optical technologies for visible, infrared, and wide band spectroscopic sensing as well as communications systems.

The efforts include high energy lasers; scalable focal plane imaging technology; photonic integrated circuits; optical system prototypes; and associated phenomenology measurements.

• Information, Computation and Exploitation Sciences develops novel architectures, tools, and techniques for the processing, fusion, interpretation, computation, and exploitation of multi-sensor, multi-intelligence data.

Efforts include innovative hardware and software technologies for graph processors and cloud computing; artificial intelligence (AI) and graph algorithms for analytics, including deep learning algorithms; multi-intelligence analytics, including open-source data processing techniques; and human-machine interfacing and automation technologies to enhance warfighter effectiveness and ability to work with advanced computing systems.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*	**Project (Number/Name)** 534 / *Lincoln Laboratory*

• Radio Frequency (RF) Systems and Technology focuses on RF technologies to enhance warfighting capabilities in radars, electronic warfare (EW), and communications.

Efforts include development of next generation phased arrays; ultra-wideband RF systems; compact RF systems; small satellite RF payload; and advanced algorithms for jammer mitigation and EW.

Emerging-technology areas:

• Advanced Materials and Processes emphasizes research in new materials for additive manufacturing and emerging nanoscale materials.

Efforts include research in understanding and controlling diamond chemical vapor deposition to support emerging and future applications; novel growth and transfer strategies for low-defect III-V devices; microwave circuits built with 3D printing; programmable shape change materials; and microsystems using metamaterials.

• Quantum System Sciences focuses on the development of quantum-based technologies that support sensing, communication, computation, and algorithms using quantum information.

Efforts include the demonstration of scalable computation platforms, magnetic field sensing using highly-compact, atomic-like defects in diamond, prototyping revolutionary quantum networking systems and technology, and research into advanced quantum algorithms and their applications.

• Autonomous Systems has the objective of developing mobile, autonomous, robotic platforms, as well as sensors and algorithms that support key capabilities needed for a wide range of DoD applications.

Efforts span advanced artificial intelligence (AI) and processing; sensors and communications for unmanned platforms; platform designs and energy systems; human-machine interactions; and verification and validation of autonomous systems.

Systems technology area:

• Integrated Systems technology efforts use multiple new technologies to solve important national problems.

Efforts selected for funding have an applied research component focused on integrated technology capability or technologies that facilitate greater levels of integrated capability. Projects target key DoD warfare domains, including space, air, land, sea surface, and undersea.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Advanced Devices	4.140	5.585	5.677

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*	**Project (Number/Name)** 534 / *Lincoln Laboratory*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The Advanced Devices project targets the research and development of unique and innovative components, subsystems, and sensing concepts or methodologies that will enable new solutions to important DoD problems. Activities under this technology area include revolutionary imaging technologies, specialized silicon and compound semiconductor-based devices for radio frequency (RF), analog, mixed-signal, and digital electronics; photonics, optoelectronics and laser technologies; microsystems; components and subsystems enabling advanced computing; and novel devices and concepts for chemical, biological, and radiation sensing. ***FY 2024 Plans:*** The Advanced Devices program will continue ongoing efforts with the goal of advancing this applied research to a stage where it can be transitioned to other programs. In particular, it will further nearer-term opportunities to be developed for Multi-GHz Lasers for Quantum Networks, Midwave Infrared Integrated Photonics, and Enabling Technologies for Free-Space Optical Communications. ***FY 2025 Plans:*** The Advanced Devices program will continue ongoing efforts in Multi-GHz Lasers for Quantum Networks, Midwave Infrared Integrated Photonics, and Enabling Technologies for Free-Space Optical Communications with the goal of advancing this applied research to a stage where it can be transitioned to other programs. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.089 between FY 2024 and FY 2025 reflects minor budget fluctuations.			
Title: Optical Systems and Technologies	4.027	5.155	5.237
Description: The Optical Systems and Technologies project area conducts research through the development, analysis, and demonstration of novel concepts, technology, and systems for the next-generation of optical systems for the DoD. This area invests in optical systems technologies that fill the critical technology gaps in emerging DoD threat areas, such as anti-access/area denial (A2/AD), counter–weapons of mass destruction (C-WMD), and asymmetric warfare, as well as to develop revolutionary technologies in the traditional DoD mission areas, such as intelligence, surveillance, and reconnaissance (ISR), space control, communications, and ballistic missile defense. ***FY 2024 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*	**Project (Number/Name)** 534 / *Lincoln Laboratory*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The Optical Systems Technology program will continue progress in next generation passive imaging components, new laser technology, and advanced optical communications. Continue proof of concept testing for long range X ray sensing concept. ***FY 2025 Plans:*** The Optical Systems Technology program will continue progress in next generation passive imaging components, new laser technology, and advanced optical communications. Continue proof of concept testing for long range X ray sensing concept. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.082 million between FY 2024 and FY 2025 reflects minor budget fluctuations.			
Title: Radio Frequency (RF) Systems and Technologies ***Description:*** : The Radio Frequency (RF) Systems and Technologies project area focuses on research, development, and evaluation of innovative RF technologies and concepts in anticipation of DoD and intelligence community requirements for radar, signals intelligence (SIGINT), communications, and electronic-warfare (EW) applications. Key RF challenges include a rapidly expanding threat spectrum, platforms with severely constrained payloads, operations in strong clutter and interference environments, detection of difficult targets, and robustness against sophisticated electronic attack. RF technologies of interest include antennas, filters, transmit/receive modules (high-power amplifier, low-noise amplifier, phase shifter, time domain up-sampling), beamformers (analog, digital, photonic), receivers/exciters (local oscillator, mixers, filters, analog-to-digital converter, digital-to-analog converter), and novel RF packaging concepts. RF systems concepts that address novel analog/digital/photonic architectures and signal processing techniques for improved RF performance are also of interest. ***FY 2024 Plans:*** The RF Systems program will continue progress in advanced RF signal processing, indoor RF networking, and novel front end component technologies. ***FY 2025 Plans:*** The RF Systems program will continue progress in advanced RF signal processing, indoor RF networking, and novel front end component technologies. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.082 million between FY 2024 and FY 2025 reflects minor budget fluctuations.	4.078	5.155	5.237
Title: Information, Computation, and Exploitation Sciences	5.677	6.880	6.986

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*	**Project (Number/Name)** 534 / *Lincoln Laboratory*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The Information, Computation, and Exploitation Sciences project area achieves significant technical gains in data processing, computation, and exploitation. The volume, velocity, and variety of information production and consumption in the DoD/Intelligence Community (IC) are growing at exponential rates, requiring the development of innovative ways to deal with this data deluge. Emerging artificial intelligence (AI)/machine learning (ML)-based technologies have the potential to significantly improve military capabilities in traditional domains such as Intelligence, Surveillance, and Reconnaissance (ISR), Command and Control (C2), and Electronic Warfare (EW) in addition to new areas such as grey zone operations. The project area is structured around a canonical AI-based decision support architecture that addresses the end-to-end processing chain, which includes data conditioning, algorithms, and human-machine teaming to determine courses of action, as well as the advanced heterogeneous computing required to convert raw data into insight. Furthermore, the program addresses specific Department of Defense Intelligence Community (DoD/IC) challenges, such as limited training data and explainable decision process. ***FY 2024 Plans:*** The Information, Computation, and Exploitation Sciences program will continue applied research and development along several key technical thrusts, including predictive and prescriptive analytics, automated Processing, Exploitation and Dissemination (PED), advanced computing technologies, and human-machine teaming, all within the context of the AI oriented decision support architecture. Continue progress in AI and exploitation algorithms for DoD missions. Continue to develop computational architectures for AI and big data applications. Apply advanced AI algorithms within select mission applications areas (material discovery, cyber, etc.). ***FY 2025 Plans:*** The Information, Computation, and Exploitation Sciences program will continue applied research and development along several key technical thrusts, including predictive and prescriptive analytics, automated Processing, Exploitation and Dissemination (PED), advanced computing technologies, and human-machine teaming, all within the context of the AI oriented decision support architecture.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*	**Project (Number/Name)** 534 / *Lincoln Laboratory*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue progress in AI and exploitation algorithms for DoD missions. Continue to develop computational architectures for AI and big data applications. Apply advanced AI algorithms within select mission applications areas (material discovery, cyber, etc.). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.106 million between FY 2024 and FY 2025 reflects minor budget fluctuations.			
Title: Autonomous Systems	3.949	4.400	4.472
Description: : The Autonomous Systems project area performs applied research in autonomous robotics to address current and anticipated national security needs. One project area goal is to enable unmanned systems to perform useful tasks in uncertain environments as trusted, capable agents without continuous human operator control. Project elements include the development of autonomy algorithms and technologies, and of infrastructure to quickly develop autonomous systems. Lincoln Laboratory also collaborates with research universities to transfer promising autonomy concepts from academia into prototype systems. Technology areas include perception and world modeling, planning, human-robot interaction, manipulation, learning and adaptation, and robotic platforms. Efforts range in scope from simulation-based seedlings to prototype efforts demonstrating autonomous system capabilities in relevant environments. ***FY 2024 Plans:*** Continue progress in artificial intelligence (AI) for robotics, platform technology, multi agent systems, and trusted and resilient autonomy. Continue to develop multi agent autonomous space technology for mission planning and satellite coordination. ***FY 2025 Plans:*** Continue progress in artificial intelligence (AI) for robotics, platform technology, multi agent systems, and trusted and resilient autonomy. Continue to develop multi agent autonomous space technology for mission planning and satellite coordination. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*	**Project (Number/Name)** 534 / *Lincoln Laboratory*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The increase of $0.072 million between FY 2024 and FY 2025 reflects minor budget fluctuations.			
Title: Quantum System Sciences ***Description:*** The Quantum System Sciences project area develops methods for sensing, communicating, and processing information using quantum mechanical manipulation not possible with classical computing techniques. Collaborating with major universities, quantum system science efforts are establishing a robust scientific foundation. On this foundation, application-oriented developments important for national security are being fostered. ***FY 2024 Plans:*** Future work in the program will focus on the underlying scientific and engineering issues of quantum system science. ***FY 2025 Plans:*** Future work in the program will focus on the underlying scientific and engineering issues of quantum system science. Continue development of trapped-ion and superconducting computing, quantum sensing technologies, and quantum networks. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** They increase of $0.087 million between FY 2024 and FY 2025 reflects minor budget fluctuations.	4.460	5.486	5.573
Title: Advanced Materials and Processes ***Description:*** The Advanced Materials and Processes project area develops materials and processes that make a transformative impact on enduring national challenges. Areas of strategic focus are material property customization and material enablers for highly-integrated, miniature platform. ***FY 2024 Plans:*** The Advanced Materials and Process program will continue to conduct research on all forms of data-enhanced, computationally accelerated materials development, alongside a focus on advanced materials technologies that underpin small platforms. Continue focus on the following areas: beyond complementary metal-oxide semiconductor (CMOS) electronics, materials for advanced sensors, integrated microstructures, and other advanced structures. ***FY 2025 Plans:*** The Advanced Materials and Process program will continue to conduct research on all forms of data-enhanced, computationally accelerated materials development, alongside a focus on advanced materials technologies that underpin small platforms.	2.878	4.300	4.370

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*	**Project (Number/Name)** 534 / *Lincoln Laboratory*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue focus on the following areas: beyond complementary metal-oxide semiconductor (CMOS) electronics, materials for advanced sensors, integrated microstructures, and other advanced structures. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.070 million between FY 2024 and FY 2025 reflects minor budget fluctuations.			
Title: Integrated Systems ***Description:*** This Integrated Systems project area combines multiple new technologies to solve important national needs. Projects selected for funding have an applied research component focused on integrated technology capability or technologies that facilitate greater levels of integrated capability. Projects target key DoD warfare domains, including space, air, land, sea surface, and undersea. The intent is to support early work on systems that cut across the conventional categories. ***FY 2024 Plans:*** The Integrated Systems program will continue to support projects that will be those of strategic interest to the DoD and aligned with Lincoln Laboratory mission areas. ***FY 2025 Plans:*** The Integrated Systems program will continue to support projects that will be those of strategic interest to the DoD and aligned with Lincoln Laboratory mission areas. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $0.105 million between FY 2024 and FY 2025 reflects minor budget fluctuations.	6.063	6.243	6.348
Title: Emerging Artificial Intelligence (AI) Capabilities ***Description:*** The Emerging Artificial Intelligence (AI) Capabilities project area funds the emerging Artificial Intelligence (AI) needs of the DoD in addressing critical operational and research areas. The AI approach addresses both the immediate operational issues as well as the long-term research requirements of the Department.	3.684	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*	**Project (Number/Name)** 534 / *Lincoln Laboratory*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
However, significant gaps exist both in the ability to understand and apply AI at the tactical edge, democratized AI development across the Department, and use new AI approaches to improve the innovation ecosystem.			
Accomplishments/Planned Programs Subtotals	38.956	43.204	43.900

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602234D8Z / *Lincoln Laboratory Research Program*	Project (Number/Name) 815 / *Cyber Security, Science and Engineering*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
815: *Cyber Security, Science and Engineering*	3.500	3.625	3.654	3.628	-	3.628	3.709	3.786	3.865	3.942	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Cyber Security, Science and Engineering research project focuses on the development of technologies and new techniques for the protection of systems against cyber- attack and exploitation.

Efforts include research into technologies for cyber situational awareness, command and control; technology to improve resilience of systems to cyber-attack; and technologies for system exploitation research.

The Cyber Security, Science and Engineering research project, 815, supports innovative research that addresses critical national security problems in cyber. The project funds innovations that directly lead to the development of new system concepts, technologies, and algorithms in support of DoD missions. Funding supports high-risk, high-payoff research, which provides unique and specialized capabilities for the current and emerging needs of the Department.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Cyber Security, Science and Engineering	3.625	3.654	3.628
Description: The Cyber Security, Science and Engineering project conducts research and development, including design, analysis, evaluation, and deployment, of prototype systems to improve the security of computer hardware, software, and networks. Its goal is to assure the resilience of Department of Defense (DoD) missions against cyber-attack and cyber-exploitation, with particular emphasis on the overlap between traditional Laboratory mission areas and the cyber domain. Ongoing efforts and areas of concentration include: foundational approaches for integrating traditional and cyber domains, tools and methods to compute threat-based cyber metrics, artificial intelligence (AI) and machine learning-based capabilities supporting cyber analysis and decision making, building trustworthy and resilient mission systems even with untrustworthy components, new cryptographic systems and prototypes, side-channel prevention and exploitation techniques in cyber and cyber-physical systems, and techniques for exploit repurposing. Integral to these efforts are demonstrations of the impact of cyber effects on traditional kinetic systems, the quantitative and repeatable evaluation of prototypes, and deployment of prototype technology to national-level exercises.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602234D8Z / *Lincoln Laboratory Research Program*	**Project (Number/Name)** 815 / *Cyber Security, Science and Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The cyber security mission area uses line funding to research new cyber security techniques in anticipation of DoD and Intelligence Community (IC) needs and requirements. ***FY 2024 Plans:*** The Cyber Security, Science and Engineering program will continue to develop far-reaching cyber improvements that will significantly improve our interactions with the cyber world. The program will continue to extend cyber applied research along the following strategic areas: cyber physical systems, cyber operations, resilient systems, and system exploitation. ***FY 2025 Plans:*** The Cyber Security, Science and Engineering program will carry on extending cyber applied research along the following strategic areas: cyber physical systems, cyber operations, resilient systems, and system exploitation that will develop far-reaching cyber improvements that will significantly improve our interactions with the cyber world. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $0.033 million between FY 2024 and FY 2025 reflects minor budget fluctuations.			
Accomplishments/Planned Programs Subtotals	3.625	3.654	3.628

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602251D8Z / *Applied Research for the Advancement of S&T Priorities*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	60.877	66.866	51.555	-	51.555	54.154	59.352	59.869	60.295	Continuing	Continuing
227: *Applied Research for the Advancement of S&T Priorities*	0.000	60.877	66.866	51.555	-	51.555	54.154	59.352	59.869	60.295	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build a Sustainable Technical Advantage, build a Resilient Joint Force and Defense Ecosystem, and Taking Care of People.

The Applied Research for the Advancement of Science and Technology (S&T) Priorities (ARAP) program builds strong Department of Defense (DoD) future technical workforce and laboratory capabilities in critical emerging technology areas within the Under Secretary of Defense for Research and Engineering (USD(R&E)) Technology Vision for an Era of Competition to enable future leap-ahead capabilities that outpace our competitors. This program funds tri-Service applied researchers to work with university and industry partners, accelerating DoD learning and technology development for new capabilities. Programs continually have follow-on activities funded by the individual Services and Agencies, which reflects the foundational research capabilities and overall value of the investment.

Specific projects support the design, development, and improvement of immature, DoD needed, technologies and new concepts to achieve general mission requirements and to translate promising research into solutions for military needs. In addition, the program enables concept exploration efforts and enables studies of alternative concepts.

The research projects are aligned with the DoD S&T priorities and designated focus areas that include non-system specific technology efforts and feasibility assessments and are formulated and managed by teams of subject matter experts drawn from the Office of the Secretary of Defense, the Military Services, and the Defense Agencies.

The program also provides support to the S&T Communities of Interest (CoIs) to ensure multi-agency collaboration and coordination. The S&T CoIs produce Joint S&T Roadmaps to contribute to the USD(R&E) Modernization Priority Roadmaps.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602251D8Z *I Applied Research for the Advancement of S&T Priorities*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	62.904	66.866	66.948	-	66.948
Current President's Budget	60.877	66.866	51.555	-	51.555
Total Adjustments	-2.027	0.000	-15.393	-	-15.393
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.021	-			
• Program Adjustments	-0.006	-	-15.497	-	-15.497
• Economic Assumptions	-	-	0.104	-	0.104

Change Summary Explanation

The decrease of $15.497 million in FY 2025 is the result of a realignment of -$6.000 million to Program Element 0603288D8Z, Science and Technology Analytic Assessments to support net technical assessments and analyses of global emerging threats and collaborative analysis with international partners, a $3.000 million to Program Element 0606300D8Z to support Defense Science Board (DSB) directed study requirements and a reduction of $6.497 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.104 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602251D8Z / *Applied Research for the Advancement of S&T Priorities*	Project (Number/Name) 227 / *Applied Research for the Advancement of S&T Priorities*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
227: *Applied Research for the Advancement of S&T Priorities*	0.000	60.877	66.866	51.555	-	51.555	54.154	59.352	59.869	60.295	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Applied Research for the Advancement of Science and Technology (S&T) Priorities program was established to implement Department-wide technology development portfolios and foster tri-Service research areas of common interest within cross-cutting S&T efforts. The program has three investment areas: (1) large, three-year applied research programs selected by the S&T Executives; (2) smaller, two-year technology 'seedling' programs nominated by the S&T Communities of Interest (CoIs) to address technology gaps or opportunities; and (3) technology assessment and study support to the CoIs. The execution of the program by the Office of the Secretary of Defense and the support it provides to the CoIs inspires and ensures joint strategic S&T oversight and multi-Service, multi-agency collaboration and coordination.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Applied Research for the Advancement of S&T Priorities (ARAP)	50.877	56.866	48.055

Description: The program focuses on cross-cutting S&T efforts that foster tri-service research areas of common interest that give the joint warfighter a technological advantage. It focuses on emerging areas of science, building expertise within the DoD laboratories, including investment in laboratory infrastructure and people, and on research areas that are a foundation for further investments by the Services following the completion of the projects.

Cross-cutting efforts are aligned with S&T Priorities, such as Electronic Warfare, Human Systems, Autonomy, Space, Kinetic Weapons, Directed Energy and Non-Lethal Weapons, Cyber, Sensors and Processing, Command, Control, Communications, Computers and Intelligence, Air Platforms, and Ground and Sea Platforms, as well other focus areas, such as Materials and Manufacturing Processes, Advanced Electronics, Energy and Power Technologies, Biotechnology, and Armed Services Biomedical Research Evaluation and Management.

FY 2024 Plans:

Complete Surface Morphing and Adaptive Structures for Hypersonics (SMASH) (Year 3 of 3) Conduct wind tunnel testing that demonstrates initial concepts to significantly extend the speed, range, and maneuverability of hypersonics.

Continue Advanced Power Electronics and Extreme-RF (APEX) (Year 2 of 3) Development of robust, solid-state, high-power RF device technology required to meet the future needs of the warfighter and counter emerging threats from our adversaries. Investigation of higher power RF transmitter chip sets improved thermal management and establish US capabilities in ultra-wide bandgap materials.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602251D8Z / *Applied Research for the Advancement of S&T Priorities*	**Project (Number/Name)** *227 / Applied Research for the Advancement of S&T Priorities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Initiate new ARAP project to be selected in third quarter FY 2023. ***FY 2025 Plans:*** Complete Advanced Power Electronics and Extreme-Radio Frequency (APEX) (Year 3 of 3) a Tri-service, multi-laboratory development of a robust, solid-state, high-power Radio Frequency device technology required to meet the future needs of the warfighter and counter emerging threats from our adversaries. Investigation of higher power RF transmitter chip sets improved thermal management and establish US capabilities in ultra-wide bandgap materials. Continue Applied Research for the Advancement of Science and Technology Priorities (ARAP) project selected in FY 2023 and initiated in FY 2024, Classical-quantum Hybrid constructs to Advance Weapons Systems (CLAWS) (Year 2 of 3). CLAWS is a Tri-service, multi-laboratory effort that will develop and demonstrate novel phenomena such as new phases in 2D materials and heterostructures, and long scale atomic coherence, to create disruptive DoD- capabilities in Infrared imaging, Positioning, Navigation and Timing (PNT), and nanophotonic devices, that will provide advanced capabilities to many military systems, particularly missiles and weapons platforms. Funding reductions will require the ARAP program to accept additional risk in on-going efforts as well as to reduce flexibility in the breadth of activities that can be supported. Specifically, the scope of the new ARAP project to be selected in third quarter FY 2024 have to be reduced to accommodate the funding adjustments. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $8.811 million between FY 2024 and FY 2025 reflects a realignment to Program Element 0603288D8Z, Science and Technology Analytic Assessments to support net technical assessments and analyses of global emerging threats and collaborative analysis with international partners and to Program Element 0606300D8Z to support Defense Science Board (DSB) directed study requirements.			
Title: Science & Technology (S&T) Communities of Interest (CoIs)	5.000	5.000	3.500
Description: The S&T CoIs facilitate coordination and collaboration across components to reduce duplication and optimize the development of critical S&T efforts across the DoD enterprise. Their efforts include the development of joint S&T roadmaps and the planning of technology integration. The CoIs assess and address capability gaps and their multi-domain operational impact. The COIs include Advanced Electronics; Air Platforms; Autonomy; Armed Services Biomedical Research Evaluation and Management. Biotechnology; Command, Control, Communications, Computers, and Intelligence (C4I); Cyber; Directed Energy - Non-Lethal Weapons; Electronic Warfare; Energy and Power; Ground and Sea Platforms; Human Systems; Kinetic Weapons; Materials and Manufacturing Processes; Sensors and Processing; and Space.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602251D8Z / *Applied Research for the Advancement of S&T Priorities*	**Project (Number/Name)** *227 / Applied Research for the Advancement of S&T Priorities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: Continue to provide support to the CoIs , in developing integrated technology roadmaps, conducting technology trade studies and technology gap analysis, and coordinating and building relationships with OSD Critical Technology Area leads. ***FY 2025 Plans:*** Provide reduced support to the Communities of Interest (CoIs), allowing them to refresh existing integrated technology roadmaps, conduct limited technology trade studies and coordinate with OSD Critical Technology Area leads. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $1.500 million between FY 2024 and FY 2025 reflects a realignment to Program Element 0603288D8Z, Science and Technology Analytic Assessments to support net technical assessments and analyses of global emerging threats and collaborative analysis with international partners and to Program Element 0606300D8Z to support Defense Science Board (DSB) directed study requirements. This will result in reduced support as indicated in the FY 2025 plans.			
Title: ARAP Seedlings ***Description:*** The program focuses on identifying a single technology gap or problem and establishing multi-service laboratory teams to solve the problem in 12–24-months. Solutions have the potential to laying the foundation for future Applied Research for Advancement of S&T Priority (ARAP) proposals. ***FY 2024 Plans:*** Support Seedlings initiated in FY 2023. Identify and select new Seedling projects in FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $5.000 million between FY 2024 and FY 2025 reflects a realignment to Program Element 0603288D8Z, Science and Technology Analytic Assessments to support net technical assessments and analyses of global emerging threats and collaborative analysis with international partners and to Program Element 0606300D8Z to support Defense Science Board (DSB) directed study requirements.	5.000	5.000	-
Accomplishments/Planned Programs Subtotals	60.877	66.866	51.555

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602668D8Z / *Cyber Security Research*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	48.915	41.258	17.437	17.652	-	17.652	18.046	18.421	18.824	19.200	Continuing	Continuing
003: *Cyber Applied Research*	48.915	41.258	17.437	17.652	-	17.652	18.046	18.421	18.824	19.200	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This Program Element supports the Department's National Defense Strategy priorities to Defend the Homeland, Deter Strategic Attacks against the United States, Deterring Aggression, and Building a resilient Joint Force and defense ecosystem.

The Cyber Security Applied Research program promotes innovative higher risk cyber research to meet joint force challenges in full spectrum cyber operations. The program addresses joint Service science and technology (S&T) gaps that influence DoD cyber research priorities and shapes the direction of the wider cyber community by integrating both defensive and offensive cyber research to develop interchangeable, defense-wide technology options to meet Combatant Command (CCMD) needs and requirements. To better align itself to the National Defense Strategy (NDS), Department of Defense (DoD) Cyber Strategy, and Office of Under Secretary of Defense for Research and Engineering (OUSD(R&E)) strategic cyber capability goals, the effort recognizes the role of electromagnetic spectrum operations (EMSO) and artificial intelligence as key enablers for cyber power projection mass, maneuver, and unity of command for dominance. The research thrusts areas are: Augmented Cognition, Dominant Cyber Operations, Dependable Systems and Networks, and Cyber Foundations.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	42.139	17.437	17.794	-	17.794
Current President's Budget	41.258	17.437	17.652	-	17.652
Total Adjustments	-0.881	0.000	-0.142	-	-0.142
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.881	-			
• Program Adjustment	-	-	-0.142	-	-0.142

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 003: *Cyber Applied Research*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602668D8Z *I Cyber Security Research*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Cyber Institutes at Institutions of Higher Learning (VICEROY)*	10.000	-
Congressional Add: *University Consortium for Cybersecurity (UC2)*	10.000	-
Congressional Add: *Pacific Intelligence and Innovation Initiatives (PI3)*	5.000	-
Congressional Add Subtotals for Project: 003	25.000	-
Congressional Add Totals for all Projects	25.000	-

Change Summary Explanation

FY 2023 prior year changes due to SBIR/STTR calculations

Program Adjustments for FY 2025 a reduction of $0.178 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.

Funding increase of $0.036 million for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602668D8Z / *Cyber Security Research*	Project (Number/Name) 003 / *Cyber Applied Research*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
003: *Cyber Applied Research*	48.915	41.258	17.437	17.652	-	17.652	18.046	18.421	18.824	19.200	Continuing	Continuing

A. Mission Description and Budget Item Justification

Cyberspace, as an operational domain, creates both significant security and resilience challenges for the joint force, as well as potential leap-ahead capabilities for military operations. Cyber is often used both to designate that domain and as shorthand for the set of technologies that enable operations in and through cyberspace, such as command-and-control, situational awareness, software analysis and hardening, and autonomy/Artificial Intelligence (AI) applications. The U.S. must maintain technological advantage in cyberspace despite a rapidly evolving globally driven commercial landscape and supply chain, and a set of determined and highly capable adversaries, to maintain mission readiness and deter conflict. The 2022 National Defense Strategy recognizes the “growing kinetic and non-kinetic threat to the United States’ homeland from our strategic competitors, “requiring the Department to “withstand, fight through, and recover quickly from disruption” embracing technology, resiliency, and innovation to act at scale and speed” as key components for all cyber efforts. The DoD will accelerate the development of those cyber capabilities that benefit our warfighters and those cyber capabilities intended to counter malicious cyber actors. It will also seize opportunities to fully integrate spectrum and sensing technologies into future cyber capabilities, to maximize situation awareness, and enable persistent operations and agile power projection options. The DoD will focus on fielding capabilities that are scalable, adaptable, and diverse to provide maximum flexibility to joint force commanders, so the joint force retains the freedom and capability to employ cyberspace operations throughout the spectrum of conflict to advance U.S. interests.

This program focuses on higher risk research ideas with major potential impact for addressing National Defense Strategy and modernization mission focus areas of cybersecurity. The program works to advance the state of cybersecurity by reducing risk, broadening applicability, and accelerating research in the areas of Augmented Cognition, Dominant Cyber Operations, Dependable Systems and Networks, and Cyber Foundations. Advances in these cyber science and technology thrusts will promote strong foundations, while disruptive innovations will create surprise, shape the fight, and ensure a decisive advantage. The thrusts provide an opportunity to identify and advance foundational technologies to support all services and agencies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: OUSD(R&E) Cyber Technologies	16.258	17.437	17.652
Description: Description: Integrating both defensive and offensive innovative cyber research within the DoD cyber science and technology enterprise to develop interoperable, defense-wide technology options that address joint force challenges in full spectrum integrated sensing and cyber operations. Augmented Cognition: Integrates human ingenuity with machine intelligence, computation, and sensing technologies to extend cognitive capabilities, empower humans, and, ultimately, improve system performance. As the complexity of the cyber battlefield increases, augmented cognition can reduce cognitive workload of cyber personnel, support more effective human-machine teaming, individualize training and learning, and improve operator situation awareness, sensemaking, decision support, and communication.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602668D8Z / *Cyber Security Research*	**Project (Number/Name)** 003 / *Cyber Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Dominant Cyber Operations: Cyber operations that embody the JP 3-0 principles of mas, maneuver, and unity of command so that they have a high probability of achieving specific outcomes with minimal collateral damage and unforeseen consequences. Operations must predict and quantify the significance of both immediate and latent higher-order effects, thus controlling the state of an intended cyber target without perturbing unintended kinetic and non-kinetic entities. Dependable Systems and Networks: Dependable systems and networks are characterized by the principles, methods, and technologies whose aim is to increase the availability, reliability, survivability, and integrity of cyber systems and networks providing critical military capabilities at the physical and logical network layers. Cyber Foundations: Provides cross-cutting opportunities across the other thrusts by promoting applied mathematics research on formal cyber proofing methods and securing data in transit. The evaluation and measurement tools that characterize CF underpin development and enable key breakthroughs in multiple fields of cyber research. ***FY 2024 Plans:*** - Emphasize the early and deep integration and acceleration of Cyber, Sensing, and Electromagnetic Spectrum Operations (EMSO) science and technology capabilities within the services and components. - Explore concepts of information advantage across the non-kinetic effects domains of cyber, EMSO, and cognitive/information. - Support development of a non-kinetic force employment strategy through integrated Cyber-EMSO capabilities, and support Operations in the Information Environment. - Kringle Mingle's Artificial Intelligence/Machine Learning (AI/ML) Internet of Things Monitoring System was successfully tested, and the code base updated to allow the platform to be used for a variety of situations other than just a distributed building monitoring system. Significant work is on-going to add Kringle Mingle's AI/ML anomaly detection algorithms to transition partner National Security Agency R4's spectrum monitoring platform. - The Development Security Operations (DevSecOps) effort has successfully integrated to Sonatype Lift, a DevSecOps platform for integrating analysis tools with development workflow, into one of Navy SSP's isolated networks. This is the first step for getting Navy teams using Lift on their own projects and transition efforts continue to integrate Lift with the Dahlgren software assurance and software factory teams. - Deliver engagement strategy and roadmap for DoD to engage ground vehicle Original Equipment Manufacturers for transition of DoD automated resilience technologies. - Work with interagency partners to draft an Interagency Task Force / Program Management Office terms of reference, that will formalize cooperation and coordination of ground vehicle security initiatives. Provide proposed input to FY 2024 NDAA - Deliver technical and analytical cyber support in researching, authoring, producing reports and analyses of existing and future full spectrum cyber operations. Assessing R&D programs and their impact on DoD information systems architectures.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602668D8Z / *Cyber Security Research*	**Project (Number/Name)** 003 / *Cyber Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Transition automated Fifth Generation (5G) core engagement architecture and capabilities to 16th Air Force and other DoD organizations ***FY 2025 Plans:*** - Augmented Cognition: Develop capabilities that enhance USCYBERCOM and Service Cyber Components' ability to increase the scale and scale of human operators in comprehending, planning executing, and assessing operations. - Dependable Systems and Networks: Develop secure hardware and software co-design that will enable development of provably secure systems at scale, design, and architecture. Cyber-physical digital-twins systems can be used to develop secure hardware/ software co-design standards with full stack visibility enabled by supply chain analysis. - Dominant Cyber Operations: Develop cyber warfighting concepts and demonstrable capabilities that integrate with electromagnetic warfare, intelligence, and kinetic operational planning and execution. Demonstrate concepts integrated within a cyber-flag or red-flag level exercise to illustrate potential/impact. - Cyber Foundations: Explore formal methods for rigorous mathematical specification and verification of cyber hardware and software systems. Industrial scale formal methods and related techniques have the potential for greatly reducing the uncertainty in the software used in military systems. - Manipulate spatial beam qualities to demonstrate laser system propagation in outdoor atmospheric environments to achieve desired effects on sensors. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.215 million between FY 2024 and FY 2025 will target seedlings in new investments areas aligned with the National Defense Strategy and DoD Cyber Strategy.			
Accomplishments/Planned Programs Subtotals	16.258	17.437	17.652

	FY 2023	FY 2024
Congressional Add: Cyber Institutes at Institutions of Higher Learning (VICEROY)	10.000	-
FY 2023 Accomplishments: -VICEROY grew to a total of 498 graduate and undergraduate students. (Reserve Officers' Training Corps – 112; Female – 142; Minority – 122). The program doubled the number of virtual institutes from 6 to 13, encompassing 45 post-secondary institutions. -VICEROY developed a summer internship program called MAVEN, where it doubled internships from 22 to 48 student participants. MAVEN mission-focused capstone models Air Force Unit Cyber Warfighting Training scenario.		

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602668D8Z / *Cyber Security Research*	**Project (Number/Name)** 003 / *Cyber Applied Research*

	FY 2023	FY 2024
-VICEROY developed 13 new undergraduate courses and one new masters program, with over 50 student research projects completed across the entire consortium. -The program signed memorandums of agreement with 4 DoD internship host sites with more expected later this year. There are currently 34 DoD participating organizations and growing monthly.		
Congressional Add: University Consortium for Cybersecurity (UC2) ***FY 2023 Accomplishments:*** -The Consortium issued three requests for information to the broader UC2 community. Funding for UC2 will incentivize and fund more than 360 institutions of higher learning to respond to Requests for Information from the Secretary of Defense, through the National Defense University. -The consortium funded three solution concepts.	10.000	-
Congressional Add: Pacific Intelligence and Innovation Initiatives (PI3) ***FY 2023 Accomplishments:*** - Pacific Intelligence and Innovation Initiatives (P3I) Executed numerous sub-agreements with HII partners in secondary schools, chamber of commerce, and military organizations - P3I is establishing summer internship opportunities - P3I will refine and promote curriculum programs with increased certificate offerings	5.000	-
Congressional Adds Subtotals	25.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602669D8Z / *Microelectronics Commons*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	65.062	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
825: *Microelectronics Research Maturation-Development*	0.000	65.062	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

Note

New Start (Y/N): No

FY 2023 funding of $65.062 million was transferred from the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Defense Fund to the FY 2023 Research, Development, Test and Evaluation, Defense-Wide appropriation for proper execution. The funds were appropriated by, and are transferred using special transfer authority provided by, section 102(b) of the CHIPS Act of 2022, division A of Public Law 117–167.

A. Mission Description and Budget Item Justification

This Program supports the Department's initiatives to Build Sustainable and Long-Term Advantage, Defend the Homeland, and Deter Aggression.

The Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) is executing the Microelectronics Commons (the Commons) activity pursuant to the Fiscal Year (FY) 2021 National Defense Authorization Act (NDAA) (Pub. L. 116-283), including the CHIPS for America Act, and funded through the CHIPS for America Defense Fund established by the CHIPS Act of 2022. The FY 2021 NDAA legislation significantly emphasizes solutions that promote the domestic on-shoring of capabilities to address economic and technology security concerns. Under FY 2021 NDAA Sec. 9903(b), the DOD is directed to establish a National Network for Microelectronics Research and Development (NNMRD) to enable the laboratory-to-fabrication transition of microelectronics innovations in the United States and to expand the global leadership in microelectronics of the United States. Specifically, the DOD is addressing a component of the NNMRD, the Commons, through a public-private partnership consisting of regional innovation hubs distributed across the U.S. to foster a pipeline of innovative ideas and talent residing in, for example, university labs and small business R&D teams.

Background

U.S. technological dominance in microelectronics materials, processes, devices, and architectural designs can only be sustained through the development of a robust domestic innovation ecosystem that fosters the rapid development and transition of novel concepts into commercially viable manufacturing processes. The U.S. innovation ecosystem has long been the driver of our nation’s technology leadership throughout the world. U.S. R&D kick-started the enormous semiconductor industry and continues to lead the world in developing the next generation of disruptive technologies including new materials, devices, circuits, architectures, and design tools.

In recent years, the efficient domestic adoption of U.S. chip innovation has been threatened as emerging hardware technologies have become increasingly reliant on offshore sources for State of the Art (SOTA) manufacturing, prototyping, and investment. There are several significant hurdles that hardware startups face, including limited or expensive access to necessary facilities and design infrastructure, high costs of design intellectual property, limited expertise with hardware engineering, and

high costs of prototyping. As a result, the number of U.S. hardware startups has dropped significantly and foreign investment in U.S.-based technology startups has enabled offshore fabrication and maturation of emerging technologies.

To address these needs, OUSD(R&E) is standing up the Commons as a public private partnership, consisting of regional innovation hubs distributed across the U.S. to foster a pipeline of innovative ideas and talent residing in university labs and small business R&D teams. The partnership will provide resources for and access to specialized lab equipment, technical expertise, and connections to existing or upgraded prototyping facilities. Fabrication facilities (fabs) will help mature promising technologies and demonstrate the manufacturing and economic benefits of these innovations for dual-use application for defense and commercial sectors.

The Commons will focus on critical, on-shore prototyping to transition innovation from universities, start-ups, and small companies to fabrication facilities (lab-to-fab transition). Key features are:
• Creates and connects “Lab-to-Fab” testing/prototyping hubs to form a network focused on maturing emerging microelectronics technologies
• Provides broad access to these prototyping hubs, potentially by augmenting facilities and enabling access to facilities within local semiconductor companies or FFRDCs.
• Facilitates microelectronics education and training of students at local colleges and universities and grows a talent pipeline to bolster local semiconductor economies and contribute more broadly to the growth of a domestic semiconductor workforce.

This program element focuses on the applied research activities of the Commons, including staffing at Commons hub facilities, early technology identification, preliminary microelectronics prototyping planning, and experimental tools.

This effort will includes early workforce development activities through the Commons network. Activities may span K-12, undergraduate, graduate and continuing education and may include, for example, establishment of PhD internships and post-doc training at Hub facilities and internships with Hub members.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	65.062	0.000	0.000	-	0.000
Total Adjustments	65.062	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Programmatic transfer from DoD Appropriation 0403D	65.062	-	-	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602669D8Z / *Microelectronics Commons*

Change Summary Explanation

FY 2023 funding of $65.062 million was transferred from the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Defense Fund to the FY 2023 Research, Development, Test and Evaluation, Defense-Wide appropriation for proper execution. The funds were appropriated by, and are transferred using special transfer authority provided by, section 102(b) of the CHIPS Act of 2022, division A of Public Law 117–167.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602669D8Z / *Microelectronics Commons*	Project (Number/Name) 825 / *Microelectronics Research Maturation-Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
825: *Microelectronics Research Maturation-Development*	0.000	65.062	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

Note

FY 2023 funding of $65.062 million was transferred from the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Defense Fund to the FY 2023 Research, Development, Test and Evaluation, Defense-Wide appropriation for proper execution. The funds were appropriated by, and are transferred using special transfer authority provided by, section 102(b) of the CHIPS Act of 2022, division A of Public Law 117–167.

A. Mission Description and Budget Item Justification

This project focuses on the applied research activities of the Commons including the early research and development of new microelectronics materials, processes, devices, and architectural designs. It seeks to answer how new models, science, and technology can be leveraged to create a different manufacturing paradigm based on proven process tools in agile microelectronics fabrication facilities (fabs). The project also supports the establishment of the Commons Hubs, which will be networks of regional capabilities organized in collaboration with the Commons Consortium Manager (CM) to address DOD and commercial needs and requirements. The Hubs may include existing facilities augmented to enhance intrinsic specializations in emerging areas of microelectronics. Each Hub will concentrate on one of six technical areas including: Secure Edge Computing, 5G/6G Technology, Artificial Intelligence Hardware, Quantum Technology, Electromagnetic Warfare, and Commercial Leap Ahead Technologies. Core Facilities (i.e., fabs) are integral parts of the Hubs network that will provide key fabrication capabilities that are required to demonstrate prototypes with the volume and characteristics required to ensure reduced risk for full manufacturing production. This effort also includes early workforce development activities through the Commons network. Activities may span K-12, undergraduate, graduate and continuing education and may include, for example, establishment of PhD internships and post-doc training at Hub facilities and internships with Hub members.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Microelectronics Research Maturation – Development	65.062	0.000	0.000
Description: This effort focuses on the identification of promising new microelectronics materials, processes, devices, and architectural designs with potential DOD applications, and early, applied research into these technologies. It will also support operation of regional Commons Hubs and initial selection and execution of Commons Projects in conjunction with activities funded by PEs 0603669D8Z and 0604669D8Z.			
FY 2024 Plans: Select initial Commons Projects to be executed by the Hubs; advanced research efforts for new microelectronics technologies (materials, processes, devices, architectural designs, etc.) with potential DOD or dual-use applications • Execution of Hubs – access to prototyping capabilities and development of the semiconductor talent pipeline.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602669D8Z / *Microelectronics Commons*	**Project (Number/Name)** 825 / *Microelectronics Research Maturation-Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Facilitate transition of novel concepts matured in a laboratory environment into low-volume prototyping processes. ***FY 2025 Plans:*** • Select the FY 2025 Commons Projects to be executed by the Hubs; advanced prototyping efforts for new microelectronics technologies with potential DOD or dual-use applications • Execution of Hubs – access to prototyping capabilities and development of the semiconductor talent pipeline. • Continue execution of FY 2024 Commons Projects; advanced prototyping efforts for new microelectronics technologies with potential DOD or dual-use applications • Continue to facilitate transition of novel concepts matured in a laboratory environment into low-volume prototyping processes. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decrease starting in FY 2025 in PE 0602669D8Z / Project 825 is a result of reallocation of funds to increase Development activities across all Commons PEs: 0602669D8Z, 0603669D8Z, and 0604669D8Z.			
Accomplishments/Planned Programs Subtotals	65.062	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602675D8Z / *Social Sciences for Environmental Security*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	3.854	4.718	5.456	-	5.456	6.045	6.341	6.479	6.609	Continuing	Continuing
046: *Providing Research and End-user Products to Accelerate Readiness and Environmental Security (PREPARES)*	0.000	3.854	4.718	5.456	-	5.456	6.045	6.341	6.479	6.609	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiative to Build Sustainable and Long-Term Advantage.

This program funds Department of Defense (DoD) physical climate and social science applied research. Climate and environmental change will impact the full range of U.S. military operating environments. DoD capabilities, until recently, have been aligned toward the historical environmental and geopolitical record; failure to anticipate and plan for the security effects of climate and environmental change holds significant potential to not only degrade DoD readiness and effectiveness but also compound the frequency and scope of novel geostrategic risks and surprises. Efforts under this program will focus on interdisciplinary science and technology that spans physical climate modeling and forecasting and social sciences capable of yielding tangible decision support tools that empower operational planners to prepare for and adapt to the complicated, interconnected security and stability challenges of climate and environmental change. Insights derived from this program will enable Combatant Commands to better engage key partners and allies in efforts to plan for and mitigate risks and promote global peace and stability.

The program includes studies, investigations, and non-system specific technology efforts directed toward general military needs with a view toward developing and evaluating the feasibility and practicality of proposed solutions and determining their parameters.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602675D8Z / *Social Sciences for Environmental Security*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	4.000	4.718	5.500	-	5.500
Current President's Budget	3.854	4.718	5.456	-	5.456
Total Adjustments	-0.146	0.000	-0.044	-	-0.044
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.146	-			
• Program Adjustments	-	-	-0.055	-	-0.055
• Economic Assumptions	-	-	0.011	-	0.011

Change Summary Explanation

A reduction of $0.055 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.011 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602675D8Z / *Social Sciences for Environmental Security*	Project (Number/Name) 046 / *Providing Research and End-user Products to Accelerate Readiness and Environmental Security (PREPARES)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
046: *Providing Research and End-user Products to Accelerate Readiness and Environmental Security (PREPARES)*	0.000	3.854	4.718	5.456	-	5.456	6.045	6.341	6.479	6.609	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program will leverage and integrate expertise from operational end users, physical climate scientists and models, tools, and datasets, and social scientists with deep understanding of designated regional and local communities to anticipate and respond more quickly and precisely to climate and environmental change risks and opportunities. The program aims to explore how specific environmental and social indicators might inform strategic reviews to adapt warfighter training and planning in anticipation of climate global trends. The research program will build upon the products of the 6.1 Minerva Research Initiative (program element 0601110D8Z) with a focus on end-user defined mission, geographic, and timescale priorities to forecast local and regional climate and environmental change effects, assess and predict likely societal impacts and responses, and ultimately provide operations planners technically-relevant and operationally precise scenarios to incorporate into Contingency Plans (CONPLANs) and Operational Plans (OPLANs) and Intelligence, Surveillance, and Reconnaissance (ISR) requirements related to climate change.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Providing Research and End-user Products to Accelerate Readiness and Environmental Security (PREPARES)	3.854	4.718	5.456
Description: PREPARES will leverage and build upon Minerva products by incorporating their findings into operationally-relevant planning scenarios that accelerate the Department's understanding of the social, cultural, behavioral, and political dynamics most likely to be affected by climate and environmental change in strategically important areas of the world. By aligning research objectives with the priorities of operational end users who can apply the tools and knowledge products to their areas of responsibility, the proposed enhancement would translate and integrate results from 6.1 strategic and global-centric analyses to provide operational and tactical assessments to inform CONPLAN and OPLAN, focusing on specific regions and detailed scenarios for the warfighter. PREPARES uniquely applies research to integrate physical climate and social sciences and accelerate "research to operations", directly impacting military operational planning and preparations to mitigate the security risks from climate and environmental change. This effort also will rapidly produce the tools and products the end-users need to sustain data-informed planning and analysis for operations and engagements with partners and allies.			
FY 2024 Plans: Second year activities will focus on continued research in the pilot priority scenario studies selected during FY 2023. The development of a data product concept, the development of a data product prototype, and opportunities for working meetings will ensure synchronization and coordination among the end users, social scientists, and physical scientists.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602675D8Z / *Social Sciences for Environmental Security*	**Project (Number/Name)** 046 / *Providing Research and End-user Products to Accelerate Readiness and Environmental Security (PREPARES)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
As the initial technical feasibility research phase wraps, the activity will coordinate with end users, including the SOCOM Enterprise, affected Commands, and Civil Affairs operational planners, social scientists, and physical scientists. Coordination will provide insights and lead to the selection for development of one or more specific data products to support data-informed planning. Initial analysis for operations and engagements with partners and allies will focus on risks related to climate and environmental change. A data product concept and development process will be drafted in FY 2024, with the following general themes: • End users provide needs/insights for product and subsequent analysis; • Physical scientists evaluate recent climate modeling at the regional level and select appropriate data inputs for use in social science modeling in areas of geopolitical importance; • Physical scientists/forecasters use knowledge and skills to provide insights for weather-climate predictability over a 12 to 18-month period; • Physical scientists/forecasters create software or products by which the hazard forecast is communicated and provided to social scientists, including a range of probabilities; • Social scientists determine what types of weather-climate hazards over a 12 to 18-month period serve as proxy for instability/conflict in areas of interest; • Social scientists use the physical science environmental output and indicator information to weigh the risks of compounding threats that are likely to emerge or have already emerged within a year to several years; • Social scientists apply weights and/or determine severity of instability/conflict due to multiplicative compound threats within a year to several years; • Social scientists provide analysis of possible scenarios on timescale and in areas of interest to end users with relative probabilities and degrees of severity to help inform which areas require immediate planning actions, which need heightened surveillance, and which do not need further action at the current time; and • End users receive a data product(s) that aids in decision making by the results of this cycle.			
FY 2025 Plans: Third-year activities will focus on continued research in the pilot priority scenario studies selected during FY 2023 and FY 2024. Resources will be applied to the design and refinement of the user interface to support subject matter specifics and human factors for ease of use and trainability. Coordination with stakeholders and end users will become more targeted and formalized. Data products and workflows will be rigorously defined and integrated into a working testbed. User-defined scenarios will be explored and evaluated.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602675D8Z / *Social Sciences for Environmental Security*	**Project (Number/Name)** 046 / *Providing Research and End-user Products to Accelerate Readiness and Environmental Security (PREPARES)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The increase of $0.738 million between FY 2024 and FY 2025 supports continued research, analysis, and development of a data product concept and prototype. Specifically, analysis of integration and architecture options for back-end alignment with existing and predicted instances in target Programs of Record.			
Accomplishments/Planned Programs Subtotals	3.854	4.718	5.456

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

NA

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602751D8Z / *Software Engineering Institute (SEI) Applied Research*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	9.788	11.168	11.310	-	11.310	11.570	11.812	12.068	12.309	Continuing	Continuing
278: *Software Engineering Institute (SEI) Applied Research*	-	9.788	10.215	10.368	-	10.368	10.607	10.828	11.063	11.284	Continuing	Continuing
817: *Cyber Security, Applied Research*	-	0.000	0.953	0.942	-	0.942	0.963	0.984	1.005	1.025	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiative to Build Sustainable and Long-Term Advantage.

The Software Engineering Institute (SEI) Federally Funded Research and Development Center (FFRDC) was established in 1984 as an integral part of the Department of Defense's (DoD) initiative to identify, evaluate, and transition software engineering technologies and practices. The mission of the SEI is to provide the DoD with technical leadership and innovation through research and development to advance the practice of software engineering and technology. The SEI works across government, industry, and academia to improve the state of software engineering from the technical, acquisition, and management perspectives. The SEI engages in research and development of critical software technologies and tools and collaborates with the larger software engineering research community. It facilitates the rapid transition of software engineering technologies into practice and evaluates emerging software engineering technologies to determine their potential for improving software-intensive DoD systems. Since its inception, the SEI has helped to transform the fields of software engineering and acquisition, network security, real-time systems, software architectures, and software-engineering process management.

Software is critical to meeting the DoD increasing demand for national defense systems that are high quality, affordable, and deployed in a timely way. With growing global parity in software engineering, the DoD must maintain leadership in all aspects of software-based system development, operation, defense, and evolution to avoid strategic surprise. To assist the DoD in retaining a long-term differential advantage over potential adversaries, the Software Engineering Institute (SEI) Applied Research program develops and evaluates the feasibility and practicality of software and computer science concepts, with the potential to improve future DoD systems. The research conducted by this program directly benefits the technical domains Autonomous Systems and Artificial Intelligence (AI), Cyber, and Engineered Resilient Systems.

The Software Engineering Institute (SEI) Applied Research Program Element (PE) develops and evaluates the feasibility and practicality of software and computer science concepts at the applied research level, with the potential to improve future Department of Defense (DoD) systems through research, development, and application in the SEI Advanced Technology Development PE 0603781D8Z. Promising projects proceed into advanced technology development through this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602751D8Z *I Software Engineering Institute (SEI) Applied Research*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	10.153	11.168	11.401	-	11.401
Current President's Budget	9.788	11.168	11.310	-	11.310
Total Adjustments	-0.365	0.000	-0.091	-	-0.091
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.363	-			
• Program Adjustments	-0.002	-	-0.114	-	-0.114
• Economic Assumptions	-	-	0.023	-	0.023

Change Summary Explanation

Reduction of $0.114 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.023 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602751D8Z / *Software Engineering Institute (SEI) Applied Research*	Project (Number/Name) 278 / *Software Engineering Institute (SEI) Applied Research*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
278: *Software Engineering Institute (SEI) Applied Research*	-	9.788	10.215	10.368	-	10.368	10.607	10.828	11.063	11.284	Continuing	Continuing

A. Mission Description and Budget Item Justification

Work conducted under this project will enable resilient mission assurance in heterogeneous and contested environments through the verification and validation of system performance and architecture. The program will also assist the Department of Defense (DoD) in retaining a long-term advantage in the areas of software-intensive systems and cyber security by enhancing assurance, exploiting automation and Artificial Intelligence (AI), and understanding human-computer interaction.

The Software Engineering Institute (SEI) Applied Research PE has two main research thrusts with known military applications: (1) Software Engineering, Systems Verification and Validation, and Mission Assurance; and (2) Information Assurance. This area is increasingly being applied to AI and autonomous systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: SEI Applied Research in the Area of Software Engineering, Systems Verification and Validation, and Mission Assurance	7.257	7.567	7.677

Description: Increasingly complex and AI-enabled systems will require a commensurate increase in sophistication of verification and validation mechanisms. This thrust seeks to develop verification techniques for requirements identification, systems of systems architectures, and virtual integration of components. Additionally, research in this area will enable requirements verification for software assurance, analysis and control of unverified code, and automated repair of damaged code. Software production and code analysis methods developed through this program will also improve the accuracy of behavior prediction of complex software, including AI-enabled systems, in untested environments.

FY 2024 Plans:
Integrate techniques in system measurement, software development and operations, and model-based systems engineering for an automated assessment, modeling, and software deployment process. Focus on strategies for resilience and mission assurance in large complex infrastructures and determine methods to manage and de-conflict resource requirements between applications from the physical to the application layer.

FY 2025 Plans:
Continue to integrate techniques in system measurement, software Development and Operations, and model-based systems engineering for an automated assessment, modeling, and software deployment process. Continue to focus on strategies for resilience and mission assurance in large complex infrastructures and determine methods to manage and de-conflict resource requirements between applications from the physical to the application layer.

FY 2024 to FY 2025 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602751D8Z / *Software Engineering Institute (SEI) Applied Research*	**Project (Number/Name)** 278 / *Software Engineering Institute (SEI) Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The increase of $0.112 million between FY 2024 and FY 2025 reflects minor budget fluctuations.			
Title: Software Engineering Institute (SEI) Applied Research in the areas of Information Assurance (IA) ***Description:*** To gain full advantage from data and information generated by software for use in missions, DoD needs to assure its software is free of vulnerabilities. In its complex systems, DoD may use software developed from an unknown supply chain that may include intentionally or unintentionally introduced vulnerabilities. This thrust seeks to develop scalable automated methods to locate, understand, and mitigate the effects of these vulnerabilities. Automated solutions developed through this thrust will be used to discover vulnerabilities in system software source code and to generate proofs of correctness or fault. Additionally, these solutions will be used to model and simulate operational environments to support software and cyber tactics, techniques, and procedures testing. ***FY 2024 Plans:*** Enable combined risk analysis between software, machine learning, and cyber security to enable assessment and management of automated systems. These risk metrics will be used to govern system configuration and management, particularly in the case of applications and embedded systems in contested environments. ***FY 2025 Plans:*** Enable large scale verification of machine learning functions for risk analysis between software, machine learning, and cyber security to enable assessment and management of automated systems. These risk metrics will be used to govern system configuration and management, particularly in the case of applications and embedded systems in contested environments. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.043 million between FY 2024 and FY 2025 reflects minor budget fluctuations.	2.531	2.648	2.691
Accomplishments/Planned Programs Subtotals	9.788	10.215	10.368

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• RDT&E, BA 3, PE 0603781D8Z: *Software Engineering Institute*	11.874	16.605	16.982	-	16.982	17.383	17.743	18.130	18.494	Continuing	Continuing

Remarks

The SEI Applied Research PE represents a pivot toward more fundamental research that enables the DoD to address longer-term challenges in software technology and engineering. The SEI Applied Research PE bolsters the organic research at the SEI Federally Funded Research and Development Center (FFRDC), enables

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602751D8Z / *Software Engineering Institute (SEI) Applied Research*	**Project (Number/Name)** 278 / *Software Engineering Institute (SEI) Applied Research*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost

stronger collaborations between the SEI FFRDC and academia, attracts top researchers to the SEI, and gives the DoD access to top experts in information science, which generally enhances the DoD's ability to benefit from the military applications of research in software and computer science.

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602751D8Z / *Software Engineering Institute (SEI) Applied Research*	Project (Number/Name) 817 / *Cyber Security, Applied Research*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
817: *Cyber Security, Applied Research*	-	0.000	0.953	0.942	-	0.942	0.963	0.984	1.005	1.025	Continuing	Continuing

A. Mission Description and Budget Item Justification

Work conducted under this project will enable resilient mission assurance in heterogeneous and contested environments through the verification and validation of system performance and architecture. The program will also assist the Department of Defense (DoD) in retaining a long-term advantage in the area of cybersecurity by enhancing assurance, exploiting automation, and understanding human-computer interaction.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Cyber Security	0.000	0.953	0.942
Description: Warfighting in the cyber domain often operates at sub-second timescales and across multiple domains of authority. Methods used to accomplish many tasks (e.g., malware analysis, coordinating multiple agents) demand large amounts of time, attention, and special skills and are not scalable. This thrust seeks to develop and increase the use of automation to simplify the completion of these tasks. Example activities include automation of moving target defenses, code artifact reverse engineering, analysis of network flows at enterprise scale, assessing the operating boundaries for Artificial Intelligence (AI) and Machine Learning (ML) algorithms, and development and assessment of workforce skills. ***FY 2024 Plans:*** Expand the notion of automated cyber defense to include second and third order effects of data compromise and effects in the context of machine learning and artificial intelligence software systems. ***FY 2025 Plans:*** Expand the notion of safety and verification for automated cyber defense to include second and third order effects of data compromise and effects in the context of machine learning and artificial intelligence software systems. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $0.013 million between FY 2024 and FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.			
Accomplishments/Planned Programs Subtotals	0.000	0.953	0.942

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602751D8Z / *Software Engineering Institute (SEI) Applied Research*	**Project (Number/Name)** 817 / *Cyber Security, Applied Research*

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602890D8Z / *High Energy Laser Research*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	44.212	47.624	48.804	48.640	-	48.640	48.742	48.979	49.443	49.343	Continuing	Continuing
890: *High Energy Laser Development*	44.212	47.624	48.804	48.640	-	48.640	48.742	48.979	49.443	49.343	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to defend the homeland, deter aggression and prevail in conflict, and build sustainable and long-term advantage.

This program funds applied research in directed energy through the Joint Directed Energy Transition Office, including studies, investigations, and component and subsystem design and development to further the knowledge base of directed-energy technologies and enable future defense capabilities to be realized by the Services as part of an overall Department of Defense directed energy science and technology program. The program is broken up into the following areas: (1) directed energy sources; (2) beam control and propagation; and (3) lethality and vulnerability to reflect the OSD science and technology priorities for directed energy. Directed energy weapons systems have many potential advantages, including speed-of-light time-to-target, high precision, low incremental cost per kill, and a magazine that is recharged through on-board, fuel-based power and thermal management systems that reduce logistics requirements in contrast to stocks of munitions or warheads. Directed energy weapon systems have the potential to perform a wide variety of military missions, including high value asset and base protection, precision strike and platform self-protection versus a wide variety of missile, rocket, artillery, mortar, and air platforms. Efforts under this program are generally chosen for their potential to have an impact on multiple directed energy weapon systems and multiple military missions while complementing specific Service needs. A broad range of technologies are addressed in key areas, such as laser sources, microwave sources, beam-control optics, antennas, waveguides, modeling and simulation, and lethality mechanisms. This program provides the enabling technologies necessary to demonstrate advanced concepts for mission areas not considered to date. The lethality, hardware and software, and modeling and simulation advances provided by this program are essential to expand and build upon current architectures. Efforts in this program have been coordinated through the Department of Defense Science and Technology Executive Committee process to harmonize efforts and eliminate duplication.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602890D8Z / *High Energy Laser Research*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	48.587	48.804	50.673	-	50.673
Current President's Budget	47.624	48.804	48.640	-	48.640
Total Adjustments	-0.963	0.000	-2.033	-	-2.033
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.005	-			
• SBIR/STTR Transfer	-0.958	-			
• Program Adjustment	-	-	-1.625	-	-1.625
• Internal Realignment	-	-	-0.507	-	-0.507
• Economics Assumption	-	-	0.099	-	0.099

Change Summary Explanation

The FY 2025 decrease of $2.033 million is the result of an internal realignment to Program Element 0604924D8Z: High Energy Laser Tech Maturation (1.625 million) to support directed energy advanced component development and prototypes.

In addition to the internal realignment, a reduction of -$0.507 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact.

Increase (.099) due to "economic assumptions”.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602890D8Z / *High Energy Laser Research*	Project (Number/Name) 890 / *High Energy Laser Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
890: *High Energy Laser Development*	44.212	47.624	48.804	48.640	-	48.640	48.742	48.979	49.443	49.343	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program is broken up into the following areas: (1) directed energy sources; (2) beam control and propagation; and (3) lethality and vulnerability to reflect the OSD science and technology priorities for directed energy. Efforts under this program are executed through the Joint Directed Energy Transition Office, including studies, investigations, and component and subsystem design and development to further the knowledge base of directed-energy technologies and enable future defense capabilities to be realized by the Services as part of an overall Department of Defense directed energy science and technology program. Directed energy weapons systems have many potential advantages, including speed-of-light time-to-target, high precision, low incremental cost per kill, and a magazine that is recharged through on-board, fuel-based power and thermal management systems that reduce logistics requirements in contrast to stocks of munitions or warheads.

Efforts under this program are generally chosen for their potential to have an impact on multiple mission areas. Directed energy weapon systems have the potential to perform a wide variety of military missions, including high value asset and base protection, precision strike and platform self-protection versus a wide variety of missile, rocket, artillery, mortar, and air platforms. As a result, this program supports a broad range of technologies in key areas, such as laser sources, microwave sources, beam-control optics, antennas, waveguides, modeling and simulation, and lethality mechanisms. This program provides the enabling technologies necessary to demonstrate advanced concepts for mission areas not considered to date. Advancements provided by this program are essential to expand and build upon current system architectures. Efforts in this program have been coordinated through the Department of Defense Science and Technology Executive Committee process to harmonize efforts and eliminate duplication.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Directed Energy Applied Research	47.624	48.804	48.640
Description: Mature technologies that improve component-level performance and enable fieldable directed energy weapon systems. Develop technologies that support improving beam control and beam propagation for directed energy weapon systems. Conduct directed energy vulnerability experiments on materials, components, and targets. Develop lethality databases and integrate technologies into system-level architectures.			
FY 2024 Plans: Conduct analyses and trades studies to determine the most effective laser and microwave source parameters. Collaborate with the national and international directed energy community on progress in the development and application of high energy laser and high power microwave technologies for military missions.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602890D8Z / *High Energy Laser Research*	**Project (Number/Name)** 890 / *High Energy Laser Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Explore advanced concepts for technologies that will improve efficiency and decrease size and weight for future laser sources. Evaluate materials for high energy laser applications. Improve understanding of laser technologies to include material interaction and propagation. Scale electrically driven lasers to higher kilowatt-class power levels. - Develop beam control technologies for high energy laser weapon use across all domains of the Department. Develop technologies to improve the beam director throughput efficiency, optimize size and weight, and improve/automate tracking and compensation through the atmosphere. Invest in atmospheric sensor innovation, field test evaluations, and next-generation models. - Characterize and understand the physics of high energy laser atmospheric propagation in adverse environmental conditions such as fog, rain, smoke and dust. Improve cameras and track illuminators to enable target engagement at longer ranges and enable improvements to shorten engagement timelines. Evaluate effectiveness of digital holography for wavefront compensation with improved deformable mirrors for high energy laser propagation through severe turbulence. - Collaborate with the national and international directed energy community on progress in the development and application of high energy laser ***FY 2025 Plans:*** - Modernize antenna designs with an emphasis on bandwidth agility throughput. Transition government-laboratory research efforts in pulsed power to industry. Decrease the size, weight, and power requirements for future high power microwave weapon systems and increase the vendor base for these critical technologies. -Conduct trade studies to determine the most effective directed energy weapon system parameters. Collaborate with the national and international directed-energy community on progress in the development and FY 2024 Plans: -Conduct analyses and trades studies to determine the most effective laser and microwave source parameters. Collaborate with the national and international directed energy community on progress in the development and application of high energy laser and high power microwave technologies for military missions. - Explore advanced concepts for technologies that will improve efficiency and decrease size and weight for future laser sources. Evaluate materials for high energy laser applications. Improve understanding of laser technologies to include material interaction and propagation. Scale electrically driven lasers to higher kilowatt-class power levels. - Develop beam control technologies for high energy laser weapon use across all domains of the Department. Develop technologies to improve the beam director throughput efficiency, optimize size and weight, and improve/automate tracking and			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602890D8Z / *High Energy Laser Research*	**Project (Number/Name)** 890 / *High Energy Laser Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
compensation through the atmosphere. Invest in atmospheric sensor innovation, field test evaluations, and next-generation models. - Characterize and understand the physics of high energy laser atmospheric propagation in adverse environmental conditions such as fog, rain, smoke and dust. Improve cameras and track illuminators to enable target engagement at longer ranges and enable improvements to shorten engagement timelines. Evaluate effectiveness of digital holography for wavefront compensation with improved deformable mirrors for high energy laser propagation through severe turbulence. - Collaborate with the national and international directed energy community on progress in the development and application of high energy laser technologies for military missions. Validate predictive models through analysis of atmospheric propagation data and measurements. - Provide maintenance, verification, validation, and accreditation for updated system level atmospheric propagation and high energy laser system models. Collaborate with Service-sponsored field-test planning to correlate model predictions with measured data for surface, maritime, and aerospace environments. Incorporate atmospheric data into theater models to support performance characterization tables. Continue the development of a predictive avoidance fire control system for use on multiple platforms. - Develop theoretical physical models describing the propagation of a high power microwave pulse through the atmosphere to understand the reflection characteristics of the high power microwave propagation. Study and understand the dynamic behavior of the propagation of high power microwave pulses and the effects on the intensity, frequency, and width of the pulse and the physical processes occurring during the interaction of the pulse with the air. - Characterize and understand the physics of high power microwave propagation in adverse environmental conditions. Collaborate with the national and international directed energy community on progress in the development and application of high power directed energy weapon technologies for military missions. - Integrate lethality and target imagery data into campaign-level high energy laser system models. FY 2025 Plans: - Modernize antenna designs with an emphasis on bandwidth agility throughput. Transition government-laboratory research efforts in pulsed power to industry. Decrease the size, weight, and power requirements for future high power microwave weapon systems and increase the vendor base for these critical technologies.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602890D8Z / *High Energy Laser Research*	**Project (Number/Name)** 890 / *High Energy Laser Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-Conduct trade studies to determine the most effective directed energy weapon system parameters. Collaborate with the national and international directed-energy community on progress in the development and application of high energy laser and high power microwave technologies for military missions. - Explore advanced concepts for technologies that will improve efficiency and decrease the size and weight for future directed energy weapons. Evaluate materials for high energy laser and high power microwave sources. Improve understanding to include material interaction and propagation. Scale electrically driven directed energy sources to higher power levels. - Develop beam control technologies for use across all domains of the Department. Develop component technologies that improve the high energy laser beam director throughput efficiency, optimize size and weight, and improve/automate tracking and compensation through the atmosphere. Invest in atmospheric characterization innovation, field test evaluations, and next-generation models. - Characterize and understand the physics of atmospheric propagation in adverse environmental conditions such as fog, rain, smoke, and dust. Improve prototype cameras and illuminators to enable target engagement at longer ranges and shorter engagement timelines. Evaluate the effectiveness of advanced sensing techniques like 3D imaging for propagation through turbulence. - Collaborate with the national and international directed energy community on progress in the development and application of high energy laser and high power microwave technologies for military missions. Jointly validate predictive models through analysis of laboratory data and field measurements. - Provide maintenance, verification, validation, and accreditation for updated system-level models. Collaborate with Service-sponsored field-test planning to correlate model predictions with measured data for surface, maritime, and aerospace environments. Incorporate atmospheric data into fast-running models to support wargaming events. Continue the development of a predictive avoidance fire control system for use on multiple platforms. Integrate previously collected lethality and target imagery data into accessible databases for use with system-level models. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $0.263 million between FY 2024 and FY 2025 reflects an internal realignment to Program Element 0604924D8Z: High Energy Laser Tech Maturation to support directed energy advanced component development, as well as a reduction to meet DoD overall funding reductions, which were spread to mitigate impact.			
Accomplishments/Planned Programs Subtotals	47.624	48.804	48.640

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602890D8Z / *High Energy Laser Research*	**Project (Number/Name)** 890 / *High Energy Laser Development*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602891D8Z / *FSRM Modeling*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	2.000	1.897	-	1.897	1.888	1.875	1.866	1.902	Continuing	Continuing
360: *FSRM*	0.000	0.000	2.000	1.897	-	1.897	1.888	1.875	1.866	1.902	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

Supports development of a facility optimization data model utilizing component real property data and investment plans that optimizes the allocation of funding to maximize facility condition and is capable of determining the level of facility investment required to meet minimum facility condition thresholds.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	2.000	1.897	-	1.897
Current President's Budget	0.000	2.000	1.897	-	1.897
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

No change for FY 2025.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602891D8Z / *FSRM Modeling*	Project (Number/Name) 360 / *FSRM*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
360: *FSRM*	0.000	0.000	2.000	1.897	-	1.897	1.888	1.875	1.866	1.902	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Facilities Sustainment, Restoration, and Modernization (FSRM) requirement is inclusive of the development of a computer system, development of software, development of standards for the FSRM prioritization. This will aid in the establishment metrics for adjudicating FSRM funding sufficiency for use in future program and budget reviews.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: FSRM Modeling	-	2.000	1.897
Description: Develop a multi-faceted optimization model that provides transparent investment requirements at the asset level that can be consistently implemented by DoD components ***FY 2024 Plans:*** -Conduct requirements development workshops -Develop a formal requirements document -Develop initial optimization framework -Develop small-scale working prototype ***FY 2025 Plans:*** -Test run small batch component data -Adjust prototype based on real world feedback -Investigate approaches for scaling model -Investigate/identify full scale computing requirements ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change for FY 2025.			
Accomplishments/Planned Programs Subtotals	-	2.000	1.897

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 2	**R-1 Program Element (Number/Name)** PE 0602891D8Z / *FSRM Modeling*	**Project (Number/Name)** 360 / *FSRM*

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603000D8Z / *Joint Munitions Advanced Technology*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	33.577	37.706	41.072	-	41.072	38.779	33.316	33.425	33.558	Continuing	Continuing
077: *Enhanced Munitions Advanced Technology*	-	33.577	37.706	8.953	-	8.953	8.458	7.274	7.437	7.586	Continuing	Continuing
356: *Energetics Advanced Technology*	-	0.000	0.000	32.119	-	32.119	30.321	26.042	25.988	25.972	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to build sustainable and long-term technology advantages to solve operational and mission-focused challenges.

The Joint Enhanced Munitions Technology Program (JEMTP), within the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) was established to develop and demonstrate joint munitions enhancing technologies (energetics, warheads, propulsion systems, advanced lethality mechanisms, fuzes and fuze components, and target detection), to provide future kinetic fires capabilities to ensure advantage for U.S. warfighters. The JEMTP concentrates on cross-cutting munitions technology needs that benefit multiple services. JEMTP investments focus on increasing and improving the performance, lethality, range, and survivability for existing and future weapons systems. The program's plans and investments are informed by threat-opportunity based analyses from Joint Force campaign scenarios.

In FY 2025, the program will execute the Energetics Advanced Technology Project focusing on development of advanced energetic materials and manufacturing to enhance munitions capability and address supply chain resilience.
The JEMTP activities within Program Element 0603000D8Z are executed under two Project Codes: 077 - Enhanced Advanced Munitions Technology and 356 – Energetics Advanced Technologies.

Project Code 077 - The Enhanced Munitions Advanced Technology Project demonstrates critical munitions technologies such as advanced materials and designs, fuzing, power sources, seeker technologies, and counter-countermeasure technologies that combine with Energetics Advanced Technologies to demonstrate enhanced munitions performance and survivability.

Project Code 355 – The Energetics Advanced Technology Project will coordinate with and leverage DoD and Service activities to develop and execute strategies for advanced energetics to enable the transition of such technologies into munitions and the energetics manufacturing base, and to inform DoD munitions requirements using prototypes and demonstrations of advanced energetics concepts.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603000D8Z / *Joint Munitions Advanced Technology*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	34.065	37.706	35.224	-	35.224
Current President's Budget	33.577	37.706	41.072	-	41.072
Total Adjustments	-0.488	0.000	5.848	-	5.848
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.485	-			
• Program Adjustments	-0.003	-	5.765	-	5.765
• Economic Assumptions	-	-	0.083	-	0.083

Change Summary Explanation

The increase of $5.765 million in FY 2025 is due to a realignment of $20.639 million from Program Element 0603375D8Z project code 375 to support Technology Innovation, a realignment of $12.632 million from Program Element 603375D8Z project code 377 to support Anomalous Incidents Research and a realignment of $0.355 million from Program Element 0603527D8Z project code 527 to support Retract Larch. A reduction of $20.861 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.083 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603000D8Z / *Joint Munitions Advanced Technology*	Project (Number/Name) 077 / *Enhanced Munitions Advanced Technology*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
077: *Enhanced Munitions Advanced Technology*	-	33.577	37.706	8.953	-	8.953	8.458	7.274	7.437	7.586	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Enhanced Munitions Advanced Technology effort will mature and demonstrate advanced technologies that can improve the performance, range, and lethality of existing and future weapons systems to inform requirements. This effort will take promising technologies demonstrated at the laboratory scale and mature them into demonstration programs with a focus on operationally relevant key munitions. Enhanced Munitions technologies that are matured and demonstrated at the Technology Readiness Level – 5 inform service requirements and transition into operational use, thereby decreasing the Program Executive Office's (PEO) program costs and risk. In FY 2025, the project will focus on developing critical munitions technologies such as advanced materials and designs, fuzing, power sources, seeker technologies, and counter countermeasure technologies that, when combined with advanced energetics, provide significant performance enhancements in range, speed, and target damage effects.

This project applies machine learning, artificial intelligence, and advanced material technologies to enable next-generation kinetic weapons capabilities, including advances in propulsion, warhead effects, fuze technologies, and targeting technologies.

In FY 2025, the Munitions Advanced Technology project continues to address the critical munitions technologies outside of advanced energetics that enable the Energetics Advanced Technology investments to be effectively incorporated into munitions systems. Increases in weapon range and run time require higher energy density munitions power sources. Lethality increases are not only dependent on advanced energetics, but also optimized munitions placement and burst point optimization.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Enhanced Munitions Advanced Technology	22.577	22.706	8.953
Description: The project investments are focused in advancing munitions capabilities in kinetic lethality effects, propulsion systems, target detection and burst point control, and weapon survivability. The selected efforts are derived from the operationally informed, Department of Defense Munitions S&T Strategic Priorities, focused on cross-cutting technologies that are broadly applicable in service munitions.			
FY 2024 Plans: - Begin executing technology development Department-wide/Industry/Academia collaboration that accelerates the transition and application of emergent advanced munitions materials and capabilities.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603000D8Z / *Joint Munitions Advanced Technology*	**Project (Number/Name)** 077 / *Enhanced Munitions Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Develop high energy fuel formulations and variable nozzle technologies for ramjet propulsion to increase future missile range and speed. - Continue developing munitions precision placement and fuzing technologies to enhance lethal effects in same or smaller munitions form factor. - Complete development of high-resolution height of burst radar using Multiple Input Multiple Output (MIMO) technology. - Develop advanced miniature fuzing and modular thermal battery systems for improved performance, reduced size/weight, and improved producibility - Develop advanced energetics - alternate production methods, virtual testing and qualification, and for application in higher performance (range, speed lethality) munitions. ***FY 2025 Plans:*** - Complete development and testing of munitions precision placement, initiation and fuzing technologies that enhance lethal effects in small form factor munitions including rockets and weaponized unmanned air vehicles. - Conduct flight validation test of high-resolution height of burst radar using Multiple Input Multiple Output (MIMO). - Demonstrate munitions miniature and modular thermal battery prototype in representative environment testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $13.753 million between FY 2024 and FY 2025 is due to a $12.139 realignment to project code 356 for investment in advanced energetics development and demonstration and a decrease of $1.614 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact.			
Title: High Reliability Cluster Munition ***Description:*** Execute enhanced area effects munitions technology development with transition into weapon demonstrators. ***FY 2024 Plans:*** - With a focus on modular architecture for maximum applicability across the Joint Service, continue to develop missile technology using submunitions and sensor fused weapons that deliver distributed area effects against widely dispersed, moving, and/or poorly located targets. - Begin evaluating technologies to optimize distributed munitions expulsion and dispersion against operationally relevant target scenarios. - Continue development and testing of precision target detection and advanced energetics/warhead technologies to enhance lethality. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	11.000	15.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603000D8Z / *Joint Munitions Advanced Technology*	**Project (Number/Name)** 077 / *Enhanced Munitions Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The decrease of $15.000 million between FY 2024 and FY 2025 is due to a realignment to focus on advanced energetics developing under Project Code 356 Energetics Advanced Technology.			
Accomplishments/Planned Programs Subtotals	33.577	37.706	8.953

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603000D8Z / *Joint Munitions Advanced Technology*	Project (Number/Name) 356 / *Energetics Advanced Technology*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
356: *Energetics Advanced Technology*	-	0.000	0.000	32.119	-	32.119	30.321	26.042	25.988	25.972	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

U.S. weapons systems still largely rely on decades-old explosive and propellant technologies that limit Joint Force options to deter, and if necessary, defeat adversaries in conflict. The Energetics Advanced Technology project is established with the mission to expedite research, testing, and evaluation, as well as to transition scale up of advanced energetics. These energetics technology investments will provide immediate benefit and improvement to munitions performance and will help to bolster energetics supply chain resiliency. The Joint Enhanced Munitions Technology Program (JEMTP), Services, and Munitions Manufacturing stakeholder community will collaborate to generate Strategic Plans and Roadmaps for advanced energetic technology development and application. The Energetics Advanced Technology project invests in cross cutting technology priorities and needs identified by the advanced energetics plans and roadmaps.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Energetics Advanced Technolog	0.000	-	32.119

Description: Funded efforts are driven by program office, service, and operational needs as outlined and planned within the DoD Munitions S&T Strategic Priorities and technology gaps identified in advanced energetics roadmaps. The project investments are focused in advanced energetics formulation, material scale-up and demonstration of enhanced performance of munitions propulsion and warhead systems. The project will leverage the energetics systems Public-Private-Partnership (PPP) Energetics Partnership Intermediary Consortium (EPIC) to coordinate and accelerate munitions technology development, demonstration, and transition. Efforts include advanced energetics formulation maturation using efficient, flexible, and adaptable processes; applying biotechnology; manufacturing at pilot-scale to deliver quantities for prototype scale testing and demonstration; and targeted munitions demonstrations using advanced energetics to quantify performance.

FY 2025 Plans:
The project executes its mission by strategically expanding development of advanced energetics capability and improved industrial base capacity through novel processes and formulations:

The project initiatives include:
- Begin development of production methods for advance energetic ingredients and formulations with a focus on CL-20 compound production capacity, cost reduction, and formulation development.
- Develop processing technologies using biomanufacturing byproducts streams and synthesize two energetics ingredients of interest at laboratory scale.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603000D8Z / *Joint Munitions Advanced Technology*	**Project (Number/Name)** 356 / *Energetics Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Develop advanced energetics material using end to end laboratory and pilot scale manufacturing through modern, continuous methods that use digital feedback and quality by design/control. - Conduct laboratory and subscale testing by combining advanced energetics with novel propulsion and warhead designs and demonstrate increased performance – target lethality, range and speed. - Begin development of machine learning modeling and simulation tools to allow optimization of energetics material formulation and processing. - Apply advanced energetics formulations, including CL-20, for missile delivered submunitions payload development that provide enhanced area effects and target defeat capabilities. - Begin testing and demonstration of missile submunitions advanced energetics payloads with precision targeting and effector technologies. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $32.119 million between FY 2024 and FY 2025 will support accelerating research, testing and demonstration of advanced energetics in munitions supporting multiple Service needs.			
Accomplishments/Planned Programs Subtotals	0.000	-	32.119

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603021D8Z / *National Security Innovation Capital*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	15.085	14.983	-	14.983	15.001	15.014	15.030	15.330	Continuing	Continuing
834: *National Security Innovation Capital (NSIC)*	0.000	0.000	15.085	14.983	-	14.983	15.001	15.014	15.030	15.330	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build Sustainable and Long-Term Advantage and Build a Resilient Joint Force Defense Ecosystem. This effort also supports Title 10 USC, Section 4811, requiring the Secretary of Defense to develop a national security strategy for the National Technology and Industrial Base (NTIB) that “reflects a prioritized assessment of the risks and challenges to the defense supply chain.”

The mission of National Security Innovation Capital (NSIC) is to accelerate the development of dual-use hardware technologies critical to our national security and economic competitiveness. It is an initiative that enables dual-use hardware startups to advance key milestones in their product development by addressing the shortfall of private investment from trusted sources. NSIC's support enables companies to develop their technologies and products more rapidly. The resulting reductions in technical risk, along with the signaling of DoD interest in such dual-use companies, attracts trusted private investment that might otherwise sit on the sidelines. The overall result is more rapid and robust development of hardware in the U.S., the expansion of the defense industrial base and reduction of technology flow to adversaries.

Areas of focus are autonomy, communications, power, sensors, and space.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	15.085	14.953	-	14.953
Current President's Budget	0.000	15.085	14.983	-	14.983
Total Adjustments	0.000	0.000	0.030	-	0.030
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustment	-	-	0.030	-	0.030

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603021D8Z *I National Security Innovation Capital*

Change Summary Explanation

The increase of $0.019 million between FY 2024 and FY 2025 is due to funding being adjusted for inflation. A reduction of $0.151 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.030 million for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603021D8Z / *National Security Innovation Capital*	Project (Number/Name) 834 / *National Security Innovation Capital (NSIC)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
834: *National Security Innovation Capital (NSIC)*	0.000	0.000	15.085	14.983	-	14.983	15.001	15.014	15.030	15.330	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of NSIC is to accelerate the development of dual-use hardware technologies critical to our national security and economic competitiveness. It is an initiative that enables dual-use hardware startups to advance key milestones in their product development by addressing the shortfall of private investment from trusted sources. NSIC's support enables companies to develop their technologies and products more rapidly. The resulting reductions in technical risk, along with the signaling of DoD interest in such dual-use companies, attracts trusted private investment that might otherwise sit on the sidelines. The overall result is more rapid and robust development of hardware in the United States, the expansion of the defense industrial base, and reduction of technology flow to adversaries.

Areas of focus are autonomy, communications, power, sensors and space.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: National Security Innovation Capital	-	15.085	14.983
FY 2024 Plans: NSIC will continue efforts that were previously funded in PE 0604341D8Z for dual-use hardware startups developing products in autonomy, communications, power, sensors, and space. Depending on the scope of the individual projects, NSIC will support up to ten companies with the $15.000 million budgeted.			
FY 2025 Plans: NSIC will continue efforts that were previously funded in PE 0604341D8Z for dual-use hardware startups developing products in autonomy, communications, power, sensors, and space. Depending on the scope of the individual projects, NSIC will support up to ten companies with the $15.000 million budgeted.			
FY 2024 to FY 2025 Increase/Decrease Statement: The increase of $0.019 million between FY 2024 and FY 2025 is due to funding being adjusted for inflation. A reduction of $0.151 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.030 million for Economic Assumptions.			
Accomplishments/Planned Programs Subtotals	-	15.085	14.983

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603021D8Z / *National Security Innovation Capital*	**Project (Number/Name)** 834 / *National Security Innovation Capital (NSIC)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

NSIC primarily utilizes Title 10 U.S. Code § 4022 authority to accelerate productization efforts in critical technology areas.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603121D8Z / *SO/LIC Advanced Development*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	14.416	4.765	30.102	5.176	-	5.176	5.204	5.312	5.424	5.532	-	-
121: *SO/LIC Advanced Development*	14.416	4.765	30.102	5.176	-	5.176	5.204	5.312	5.424	5.532	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression, Defend the Homeland, and Build Sustainable and Long-Term Advantage.

The SO/LIC Advanced Development subgroup within IWTSD will build on lessons learned from more than a decade of developing, managing, and overseeing the Secure Unclassified Network (SUNet) to develop, test, and deliver advanced tools and capabilities for the Department to campaign in and through cyberspace, maximize cyber capabilities in support of integrated deterrence, and effectively use cyber operations to generate asymmetric advantages. IWTSD has restructured its internal team to capitalize on the extensive expertise and experience to streamline the implementation and validation of Artificial Intelligence and cybersecurity requirements across IWTSD’s project portfolio as well as develop novel tools and capabilities in collaboration with our partners across the cyber domain.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	4.919	30.102	5.176	-	5.176
Current President's Budget	4.765	30.102	5.176	-	5.176
Total Adjustments	-0.154	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.033	-			
• SBIR/STTR Transfer	-0.121	-			

Change Summary Explanation

No change for FY 2025 from previous PB.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603121D8Z / *SO/LIC Advanced Development*

FY 2025 decrease from FY 2024, supports the transfer of SUNet cybersecurity and infrastructure requirements and SUNet to CDAO PE 0604123D8Z. Effective July 1, 2023, SUNet system owner responsibilities and management control transferred to CDAO. This successful transition enables CDAO to execute its mandate to centrally manage AI enterprise platforms, services, and data, and promises to extend and preserve SUNet's success and security to continue enabling rapid AI development, collaboration, and information sharing among DoD and the Joint Forces.
IWTSD's core funds in PE 0603121D8Z will remain with SO/LIC IWTSD to continue to support enhanced cyber resiliency and hardening for IWTSD projects and support to DoD missions.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Secure, Unclassified Network (SUNet)	4.765	30.102	5.176

Description: Develop, test, and deploy tools, concepts, and capabilities to protect, support, and enhance DoD and joint operations resiliency in the cyber domain; conduct research, analysis, and development to understand, integrate, and mitigate impacts of emerging and disruptive technologies on digital infrastructures; and support integration, testing, hardening, accreditation, and transition of IWTSD sponsored tools and capabilities to end user systems and production environments.

FY 2024 Plans:
In FY 2024, the SO/LIC Advanced Development subgroup plans to continue ongoing technical and security support for IWTSD projects to enable accelerated testing, fielding, integration, accreditation, and transition of secure prototypes, tools, and capabilities to end user systems. The SO/LIC Advanced Development subgroup also plans to initiate new projects focused on integrated deterrence and building resilience in the cyber domain. Examples include:
• Pilot the use of generative AI to triage network traffic and user activity in support of enhanced security operations and red teaming.
• A secure development, testing, and assessment environment to facilitate enhanced cyber hardening of IWTSD projects.
• Development of tools, technologies, and capabilities that protect DoD assets and information networks from malicious cyber activity, enable a cyber resilient workforce, promote cyber information sharing within the Department and among partners and allies, and improve cybersecurity processes and services through automation.

FY 2025 Plans:
In FY 2025, the SO/LIC Advanced Development subgroup plans to continue ongoing technical and security support for IWTSD projects to enable accelerated testing, fielding, integration, accreditation, and transition of secure prototypes, tools, and capabilities to end user systems, as well as funding for ongoing projects in areas focused on integrated deterrence and building resilience in the cyber domain. Examples include:
• Iterative development and testing of generative AI and large language models for network traffic analysis and anomaly detection.
• A secure development, testing, and assessment environment to facilitate enhanced cyber hardening of IWTSD projects.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603121D8Z / *SO/LIC Advanced Development*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Development of tools, technologies, and capabilities that protect DoD assets and information networks from malicious cyber activity, enable a cyber resilient workforce, promote cyber information sharing within the Department and among partners and allies, and improve cybersecurity processes and services through automation. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Since FY 2020, IWTSD used core funds in PE 0603121D8Z to proactively manage cyber security risk of the SUNet system by providing continuous monitoring, assessment and authorization activities, and technical overwatch of the Defense Contracting Organization and its prime vendor as they managed and maintained the SUNet enterprise system. The $25M increase in FY 2024 provides dedicated program funding for SUNet cybersecurity and infrastructure requirements and will transfer with SUNet to CDAO PE 0604123D8Z. Effective July 1, 2023, SUNet system owner responsibilities and management control transferred to CDAO. This successful transition enables CDAO to execute its mandate to centrally manage AI enterprise platforms, services, and data, and promises to extend and preserve SUNet's success and security to continue enabling rapid AI development, collaboration, and information sharing among DoD and the Joint Forces. IWTSD's core funds in PE 0603121D8Z will remain with SO/LIC IWTSD to continue to support enhanced cyber resiliency and hardening for IWTSD projects and support to DoD missions. FY 2024 budget reflects a $25.0M pending transfer to CDAO in support of SUNet. Otherwise, decrease due to re-phasing of FY 2025 funding to FY 2026 and FY 2027.			
Accomplishments/Planned Programs Subtotals	4.765	30.102	5.176

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	1,330.170	148.907	75.593	76.639	-	76.639	78.268	79.909	81.589	83.221	-	-
484: *Combating Terrorism Technology Support (CTTS)*	1,330.170	148.907	75.593	76.639	-	76.639	78.268	79.909	81.589	83.221	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Irregular Warfare Technical Support Directorate (IWTSD) conducts rapid research and development in support of the National Defense Strategy (NDS), and the Irregular Warfare Annex, to provide leap-ahead technologies focused on surpassing current and expected levels of technology used and developed by our adversaries, with China as the pacing threat. IWTSD is mandated and structured to rapidly fill capability gaps, to include increasing lethal capability of U.S. forces at the squad and small unit level; developing lethal drones; countering Small Unmanned Aerial Systems (drones); subterranean detection and operations; novel body and vehicle armor; detecting, protecting against, and mitigating novel and wartime CBRNE threats; telematics; covert communications; and of special interest, the use of machine learning and artificial intelligence to enhance the capability of systems used by the military and lessen the workload on the individual users.

During FY 2024 and into FY 2025, IWTSD will continue to focus its R&D activities to rapidly fill the immediate, emerging, and critical capability gaps for those at the tactical edge to include our nations special operations forces, other military operators, intelligence analysts, and first responders.
The number of capability gaps IWTSD is able to address are reduced due to the increased cost of incorporating artificial intelligence, machine learning, cyber hardening, and DoD safety testing of prototype systems prior to OT&E. For instance, the focus on increased lethality has driven up costs to meet Defense safety and testing requirements.
From a broader perspective, projects remain distributed among 10 mission categories:

- Advanced Analytics
- Chemical, Biological, Radiological, Nuclear, and Explosives
- Explosive Ordnance Disposal and Explosive Operations
- Expeditionary Force Protection
- Advanced Development
- Human Performance and Training
- Indirect Influence and Competition
- Protection, Survivability, and Recovery
- Surveillance, Collection, and Operations Support
- Tactical Offensive Support

To accommodate shifting emphasis in mission articulated in the FY 2022 National Defense Strategy, while still operating within budget, IWTSD eliminated the Forensics, Exploitation and Identity Management subgroup and added the Advanced Development subgroup. In order to place greater emphasis on the Congressionally directed

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*

joint RDT&E programs with Israel, almost 100% of the staff in the Expeditionary Force Protection and the Protection, Survivability, and Recovery subgroups are dedicated to supporting the countering unmanned aerial vehicles and subterranean detection and operations joint RDT&E efforts.

Each of the 10 program subgroups have enduring R&D partnerships with the components of USSOCOM, the Services; and many Defense Agencies. During FY 2023, IWTSD has partnered with USSOCOM, the Services, and Defense agencies to transition or commit to transition over 30 products to a Program of Record, limited procurement, commercialization, or a transition where small numbers of unique prototypes meet special mission requirements. IWTSD's International R&D program has helped other DoD Components and organizations initiate task plans, that support execution of over $20+ million dollars to rapidly develop and prototype new technology and innovation through collaboration and cost sharing with Israel.

While supporting the NDS by filling capability gaps to address our adversaries, with China as the pacing threat, the IWTSD program will continue to identify capabilities to combat terrorism and irregular adversaries and quickly deliver these capabilities to U.S. Defense, interagency, and international partners through rapid research and development, advanced studies, and technical innovation. IWTSD is unique in its approach, annually obtaining joint requirements directly from major Commands, Services, military operators, intelligence analyst, and first responders and discussing those requirements with industry before the requirements are released in a Broad Agency Announcement (BAA).

The FY 2025 Program Requirements Meetings will take place in January, 2024 and contract awards will begin in October or November 2024 (the start of FY 2025).

The IWTSD manages approximately 220 individual projects and international task plans; while also reviewing proposals and negotiating contracts for another 70 requirements for the next fiscal year.

The IWTSD program justified in the R-2 exhibit identifies the projects fully or partially funded by Congressional appropriations for the IWTSD program. However, IWTSD also develops technology and provides support using external funds provided by other DoD and federal departments and international partnerships. These external funds are not reflected in this justification R-2; but the number of activities does reflect positively on the trust and competence that IWTSD has earned throughout the Department of Defense, its international partners, and other Federal organizations to rapidly conduct critical RDT&E and provide innovative products to fill their capability gaps.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	153.114	75.593	76.639	-	76.639
Current President's Budget	148.907	75.593	76.639	-	76.639
Total Adjustments	-4.207	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.207	-			

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 484: *Combating Terrorism Technology Support (CTTS)*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603122D8Z *I Combating Terrorism Technology Support*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Combating Terrorism Technology Support (CTTS)*	80.500	-
Congressional Add Subtotals for Project: 484	80.500	-
Congressional Add Totals for all Projects	80.500	-

Change Summary Explanation

No change in FY 2025 from previous PB.

FY 2025 program increase from FY 2024 to address capability gaps between U.S. military forces and peer and near-peer threats.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603122D8Z / *Combating Terrorism Technology Support*				Project (Number/Name) 484 / *Combating Terrorism Technology Support (CTTS)*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
484: *Combating Terrorism Technology Support (CTTS)*	1,330.170	148.907	75.593	76.639	-	76.639	78.268	79.909	81.589	83.221	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Irregular Warfare Technical Support Directorate (IWTSD) conducts rapid research and development in support of the National Defense Strategy (NDS), and the Irregular Warfare Annex, to provide leap-ahead technologies focused on surpassing current and expected levels of technology used and developed by our adversaries, with China as the pacing threat. IWTSD is mandated and structured to rapidly fill capability gaps, to include increasing lethal capability of U.S. forces at the squad and small unit level; developing lethal drones; countering Small Unmanned Aerial Systems (drones); subterranean detection and operations; novel body and vehicle armor; detecting, protecting against, and mitigating novel and wartime CBRNE threats; telematics; covert communications; and of special interest, the use of machine learning and artificial intelligence to enhance the capability of systems used by the military and lessen the workload on the individual users.

During FY 2024 and into FY 2025, IWTSD will continue to focus its R&D activities to rapidly fill the immediate, emerging, and critical capability gaps for those at the tactical edge to include our nations special operations forces, other military operators, intelligence analysts, and first responders.
The number of capability gaps IWTSD is able to address are reduced due to the increased cost of incorporating artificial intelligence, machine learning, cyber hardening, and DoD safety testing of prototype systems prior to OT&E. For instance, the focus on increased lethality has driven up costs to meet Defense safety and testing requirements.
From a broader perspective, projects remain distributed among 10 mission categories:
• Advanced Analytics
• Chemical, Biological, Radiological, Nuclear, and Explosives
• Explosive Ordnance Disposal and Explosive Operations
• Expeditionary Force Protection
• Advanced Development
• Human Performance and Training
• Indirect Influence and Competition
• Protection, Survivability, and Recovery
• Surveillance, Collection, and Operations Support
• Tactical Offensive Support
To accommodate shifting emphasis in mission articulated in the FY 2022 National Defense Strategy, while still operating within budget, IWTSD eliminated the Forensics, Exploitation and Identity Management subgroup and added the Advanced Development subgroup. In order to place greater emphasis on the Congressionally directed

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

joint RDT&E programs with Israel, almost 100% of the staff in the Expeditionary Force Protection and the Protection, Survivability, and Recovery subgroups are dedicated to supporting the countering unmanned aerial vehicles and subterranean detection and operations joint RDT&E efforts.

Each of the 10 program subgroups have enduring R&D partnerships with the components of USSOCOM, the Services; and many Defense Agencies. During FY 2023, IWTSD has partnered with USSOCOM, the Services, and Defense agencies to transition or commit to transition over 30 products to a Program of Record, limited procurement, commercialization, or a transition where small numbers of unique prototypes meet special mission requirements. IWTSD's International R&D program has helped other DoD Components and organizations initiate task plans, that support execution of over $20+ million dollars to rapidly develop and prototype new technology and innovation through collaboration and cost sharing with Israel.

While supporting the NDS by filling capability gaps to address our adversaries, with China as the pacing threat, the IWTSD program will continue to identify capabilities to combat terrorism and irregular adversaries and quickly deliver these capabilities to U.S. Defense, interagency, and international partners through rapid research and development, advanced studies, and technical innovation. IWTSD is unique in its approach, annually obtaining joint requirements directly from major Commands, Services, military operators, intelligence analyst, and first responders and discussing those requirements with industry before the requirements are released in a Broad Agency Announcement (BAA).

The FY 2025 Program Requirements Meetings will take place in January, 2024 and contract awards will begin in October or November 2024 (the start of FY 2025).

The IWTSD manages approximately 220 individual projects and international task plans; while also reviewing proposals and negotiating contracts for another 70 requirements for the next fiscal year.

The IWTSD program justified in the R-2 exhibit identifies the projects fully or partially funded by Congressional appropriations for the IWTSD program. However, IWTSD also develops technology and provides support using external funds provided by other DoD and federal departments and international partnerships. These external funds are not reflected in this justification R-2; but the number of activities does reflect positively on the trust and competence that IWTSD has earned throughout the Department of Defense, its international partners, and other Federal organizations to rapidly conduct critical RDT&E and provide innovative products to fill their capability gaps.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Advanced Analytic Capabilities (AAC)	5.943	7.966	8.572
Description: The Advanced Analytics (AA) Subgroup's objective is to develop and deploy integrated analytic capabilities; enabling Commanders, Warfighters, and Mission Partners to share information and make better/faster decisions at the Strategic, Operational, and Tactical levels. AA projects improve sense-making, decision-making, and data management across a range of mission areas.			
FY 2024 Plans: In FY 2024, the AA Subgroup plans to initiate funding of four (4) projects in areas focused on: 1. Developing our warfighting capabilities with Allies and Partners; 2. Enable capabilities and deepen interoperability; 3. Develop trusted artificial intelligence and autonomy, integrated network system-of-systems, microelectronics, and human-machine interfaces. Examples include, but are not limited to:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Develop modeling software to better understand non-linear and non-kinetic impacts of irregular warfare activities following the Correlation of Forces and Means (COFM) framework for kinetic effects and attrition of enemy forces. • Develop an analytical tool that will generate synthetic libraries improving Computed Tomography (CT) and Advanced Imaging Technology (AIT) in screening baggage and passengers. • Develop an analytical tool to improve the detection and geolocation of Unknown RF signals. Currently Adversarial Covert Communications Detection lack the fluidity required across different environments and post-mission reporting and analysis. This requires an enhanced version of the STORM/EWST/MELIAN Electronic Warfare Support System. • Develop an enterprise analytics system to support a deployable 3-D printing capability. The system will enable replication of select parts and special tools that might be required to sustain operations while deployed in forward environments. In FY 2024, the AA Subgroup plans to continue funding four (4) projects in areas focused on: 1. Developing our warfighting capabilities with Allies and Partners; 2. Enabling capabilities and deepen interoperability; 3. Develop trusted artificial intelligence and autonomy, integrated network system-of-systems, microelectronics, and human-machine interfaces. Examples include, but are not limited to: • Continuing the study of methods to counter adversarial artificial intelligence software and operational networks through model exploitation that use techniques like poisoning, evasion, or full inversion. • Continuing the development of an integrated operator-sensor network based on low-signature LPWAN and 5G ATAK clusters infrastructure enabling wide area search and barrier operations through resilient ad hoc networking. In FY 2024, the AA Subgroup plans to complete funding of four (4) projects in areas focused on: 1. Developing our warfighting capabilities with Allies and Partners; 2. Enabling capabilities and deepen interoperability; 3. Develop trusted artificial intelligence and autonomy, integrated network system-of-systems, microelectronics, and human-machine interfaces. Examples include, but are not limited to: • Completion of an edge analytics application and plugin for the Tactical Assault Kits (TAK) which generate objective 3D maps from actively or passively collected small unmanned aerial systems (sUAS). • Continuing the spiral development of the Enhanced Electronic Warfare Support System that enhances signal-processing performance and develops a supplemental signals reference library improving system machine learning capabilities. ***FY 2025 Plans:*** In FY 2025, the AA Subgroup plans to complete seven (7) projects in areas focused on: 1. Developing our warfighting capabilities with Allies and Partners; 2. Enabling capabilities and deepen interoperability; 3. Develop trusted artificial intelligence and autonomy, integrated network system-of-systems, microelectronics, and human-machine interfaces. Examples include, but are not limited to:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Development of a modeling software to better understand non-linear and non-kinetic impacts of irregular warfare activities following the Correlation of Forces and Means (COFM) framework for kinetic effects and attrition of enemy forces. • Development of an analytical tool that will generate synthetic libraries improving Computed Tomography (CT) and Advanced Imaging Technology (AIT) in screening baggage and passengers. • Development of an AI/ML enabled operations/missions planning tool that analyzes salient battlefield variables and formulates viable courses of action (COA) by employing orchestrated, multi-model AI algorithms to triage viable COAs. Human users will benefit by having near real time decision recommendations provided by the AI. • Development of an enterprise analytics system to support a deployable 3-D printing capability. The system will enable replication of select parts and special tools that might be required to sustain operations while deployed in forward environments. • Complete development of an integrated operator-sensor network based on low-signature LPWAN and 5G ATAK clusters infrastructure enabling wide area search and barrier operations through resilient ad hoc networking. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in funding supports the emergence and demand for the greater use of Artificial Intelligence (AI) and Machine Learning (ML) and to integrate these capabilities into enhanced, complex systems.			
Title: CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR, AND EXPLOSIVES (CBRNE)	7.565	9.764	9.599
Description: The CBRNE Subgroup's objective is to improve defense capabilities to meet tomorrow's CBRNE threats. The subgroup focuses on threat characterization; materials attribution; personal protective equipment; detection of CBRNE materials at trace and bulk levels at point, proximity and stand-off distances; development of information resources and decision support tools to assist response elements with risk-based decision making; and consequence management for post-event activities. ***FY 2024 Plans:*** For FY 2024, the CBRNE Subgroup is currently evaluating requirements and proposals and plans to initiate funding 5 new projects focused on 1) collaborating with our NATO Allies and Partners; 2) developing key enabling capabilities and deepening interoperability; 3) lethal, sustainable, resilient, survivable, agile, and responsive future force; 4) seed opportunities in Biotechnology, Quantum Science, Advanced Materials, and Clean-energy technology: • Assessment of microfluidics and their impact on the feasibility of threat material production using atypical synthesis routes. • Development of a technology to maintain the viability and integrity of CB materials and samples. • Development of a library of techniques and methods in the field of synthetic biology that may be subject to misuse. • Identification of a textile barrier material which does not incorporate any polyfluoroalkyl substances (PFAS) and can be used in the production of National Fire Protection Association Class 3 Protective Ensembles capable of passing certification testing. • Evaluation of the effect and impact of mitigation measures, including the effectiveness of various chemical filtration mitigation measures, detection equipment, and evacuation and shelter in place procedures.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2024, the CBRNE Subgroup plans to continue funding 15 projects in areas focused on 1) collaborating with our NATO Allies and Partners; 2) integrated deterrence with counterparts across USG and Allies and Partners; 3) developing key enabling capabilities and deepen interoperability; 4) lethal, sustainable, resilient, survivable, agile, and responsive future force; 5) rapid experimentation, acquisition and fielding; 6) seed opportunities in Biotechnology, Quantum Science, Advanced Materials, and Clean-energy technology. Examples include, but are not limited to: • Development of fieldable prototype sensors for monitoring complex wastewater samples and detecting biological agents of concern. • Enhancing mitigation techniques to reduce the impact of threat releases in transportation platforms and confined spaces. • A multi-year test and evaluation program for the identification and rapid laboratory and field evaluation of emerging commercial and near-commercial explosive detection technologies to facilitate the acceleration, improvement, and fielding of promising capabilities. • Development, validation, and/or sharing microbial assays and techniques for attribution of bioterrorist agents. In FY 2024, the CBRNE Subgroup plans to complete funding 30 projects in areas focused on 1) collaborating with our NATO Allies and Partners; 2) integrated deterrence with counterparts across USG and Allies and Partners; 3) developing key enabling capabilities and deepen interoperability; 4)) lethal, sustainable, resilient, survivable, agile, and responsive future force; 5) rapid experimentation, acquisition and fielding; 6) seed opportunities in Biotechnology, Quantum Science, Advanced Materials, and Clean-energy technology. Examples include, but are not limited to: • Identifying successful operational guidance for decontaminating fentanyl and its analogs. • Development of an unmanned aerial system payload to automatically detect, identify, and map chemical plumes for situational awareness. • Development of a man-portable system that can reliably detect explosives through continuous gas phase monitoring. • Development of a portable, ruggedized Raman microscopy system capable of detecting trace explosives and other residues with minimal logistical burden for operators. • Assessment and further development of the Functional Genomic and Computational Assessment of Threats (Fun GCAT) system to identify attempts to exploit natural and synthetic biology for nefarious purposes. • Development of innovative approaches to rapid screening, sample collection, and preservation of samples to enhance the exploitation of chemical and biological materials. • Optimizing the methodology for using Alternative Light Sources (ALS) systems to visualize and screen for pharmaceutical-based agent (PBA) threats.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Development of evidence and consensus-based guidance for laundry protocols and decontamination confirmation for personal protective equipment after ricin, abrin, and pharmaceutical-based agent incidents. ***FY 2025 Plans:*** In FY 2025, the CBRNE Subgroup plans to continue funding 12 projects in areas focused on 1) collaborating with our NATO Allies and Partners; 2) integrated deterrence with counterparts across USG and Allies and Partners; 3) developing key enabling capabilities and deepen interoperability 4) lethal, sustainable, resilient, survivable, agile, and responsive future force; 5) seed opportunities in Biotechnology, Quantum Science, Advanced Materials, and Clean-energy technology. Examples include, but are not limited to: • Development of fieldable prototype sensors for monitoring complex wastewater samples and detecting biological agents of concern. • Enhancing mitigation techniques to reduce the impact of threat releases in transportation platforms and confined spaces. • Determination of operationally deployed detection techniques and systems that could be further developed or exploited to provide additional chemical detection capabilities in a search environment. • Identification of a textile barrier material which does not incorporate any polyfluoroalkyl substances (PFAS) and can be used in the production of National Fire Protection Association Class 3 Protective Ensembles capable of passing certification testing. • Develop, validate, and/or share microbial assays and techniques for attribution of bioterrorist agents. • Development of a technology to maintain the viability and integrity of CB materials and samples. In FY 2025, the CBRNE Subgroup plans to complete funding 3 projects in areas focused on 1) collaborating with our NATO Allies and Partners; 2) lethal, sustainable, resilient, survivable, agile, and responsive future force: • Development of GFR related crowd modeling scenarios by independent generation of scenarios by Australian scientists using US developed software. • Assessment of microfluidics and their impact on the feasibility of threat material production using atypical synthesis routes. • Characterization of the aerial dispersion, the effects of dynamic meteorological conditions, and the impact of hard-kill countermeasures on CBR-carrying UAS. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The slight decrease in funding is reflective of Departmental Priorities and budgetary adjustments. There is no significant impact to the mission.			
Title: Explosive Ordnance Disposal/Explosive Operations (EOD/EXO)	5.768	6.222	7.029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The EOD/EXO Subgroup's objective is to deliver capabilities to defeat or neutralize the continuum of improvised weapons and explosive devices. EOD/EXO improves the operational capabilities of the bomb disposal and explosive operations community, consisting of military EOD, combat engineers, as well as special operations forces by developing and delivering advanced tool technologies and decision support tools to defeat improvised devices. The EOD/EXO Subgroup identifies and prioritizes multi-agency end-user requirements in collaboration with military units. EOD/EXO actively works with vendors and end-users to deliver advanced prototype systems that provide greater efficiency and increased safety for Bomb Technicians who investigate, access, evaluate, and if needed, render safe or dispose of suspect devices. ***FY 2024 Plans:*** In FY 2024, the EOD/EXO Subgroup plans to initiate funding for 3 projects and speed their delivery to the warfighter in the areas focused on 1) Data integration, software, and artificial intelligence efforts 2) Speed and accuracy improvements in detection and targeting, and 3) Development of key enabling capabilities and deepened interoperability as shown below: • Development of a collection of 2-D images and 3-D scans of inert or inerted military ordnance, improvised explosive devices (IED) and IED-related components. These scans will help train artificial intelligence (AI) and machine learning (ML) algorithms to identify ordnance items in different orientations as well as provide trainers a collection of accurate, well documented graphics for training EOD and Unexploded Ordnance (UXO) personnel. • Development of a Siri/ChatGPT-like capability for Joint Service EOD technicians that act as a virtual reach-back capability. This would give the technician the ability to query questions of operational relevance that could be accessed without an internet connection. • Update tools and procedures used to explosively breach structures and dispose of ordnance items without causing high order detonations through a bilateral agreement with Defense R&D Canada (DRDC). In FY 2024, the EOD/EXO Subgroup plans to continue funding 4 project efforts and speed their delivery to the warfighter in areas focused on 1) Integration of data, software, and artificial intelligence, and 2) Development of warfighting capabilities together with those of our Allies and partners as shown below: • Bilateral information exchange between U.S.-based bomb technicians and members of the Israel National Police Bomb Disposal Division. • Development of a comprehensive and shareable dataset that will include multi-angle photographs and x-ray images of IEDs, IED components, and printed circuit boards (PCBs) in various configurations and orientations. • Development of ML algorithms that identify IEDs and ordnance using cameras and mobile computing technologies to enhance the safety and reduce the cognitive burden of counter IED (CIED) operators in high threat environments.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Design and develop a capability to remotely x-ray, manipulate, access, and interrogate an IED or explosive hazard to collect improved intelligence from the device. In FY 2024, the EOD/EXO Subgroup plans to complete funding 2 project efforts and speed their delivery to the warfighter in areas focused on 1) Integration of data, software, and artificial intelligence, and 2) Development of warfighting capabilities together with those of our Allies and partners as shown below: • Design and develop a ceramic cutting tool to be utilized by EOD and bomb disposal technicians to enhance capabilities of the US and Israel to effectively perform hand entry procedures on IEDs. • Develop ML algorithms that identify IEDs, ordnance items, and circuit boards using mobile computing technologies and cameras to assist EOD technicians during sweep operations. ***FY 2025 Plans:*** In FY 2025, the EOD/EXO Subgroup plans to continue funding 3 projects in the areas focused on 1) Develop our warfighting capabilities together with those of our Allies and partners, and 2) Integrate data, software, and artificial intelligence efforts and speed their delivery to the warfighter. • Bilateral information exchange between U.S.-based bomb technicians and members of the Israel National Police Bomb Disposal Division. • Development of a Siri/ChatGPT-like capability for Joint Service Explosive Ordnance Disposal (EOD) technician that act as a virtual reach-back capability. This would give the technician the ability to query questions of operational relevance that can be accessed without an internet connection. • Design and develop a capability to remotely x-ray, manipulate, access, and interrogate an IED to collect as much intelligence off the device as possible. In FY 2025, the EOD/EXO Subgroup plans to complete funding 4 project efforts and speed their delivery to the warfighter in areas focused on 1) Integration of data, software, and artificial intelligence, and 2) Development of warfighting capabilities together with those of our Allies and partners as shown below: • Development of ML algorithms that identify conventional ordnance and IEDs using cameras and mobile computing technologies to enhance safety and reduce the cognitive burden of CIED operators in high threat environments. • Development of a collection of 2-D images and 3-D scans of inert or inerted military ordnance, IEDs and IED-related components. These scans will help train AI and ML algorithms to identify ordnance items in different orientations, as well			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
as providing trainers a collection of accurate, well documented graphics for training EOD and Unexploded Ordnance (UXO) personnel. • Development of a comprehensive and shareable dataset that will include multi-angle photographs and x-ray images of IEDs, IED components, and printed circuit boards in various configurations and orientations. • Design and develop a capability to remotely x-ray, manipulate, access, and interrogate an IED or explosive hazard to collect improved intelligence from the device. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in funding is reflective of Departmental priorities with those of our Allies and partners to integrate data, software, and artificial intelligence into EOD systems.			
Title: Indirect Influence and Competition (I2C) ***Description:*** The Indirect Influence and Competition (I2C) Subgroup's objective is to develop new concepts and capabilities for warfighters and interagency partners. In accordance with the National Defense Strategy, projects emphasize preparation to defeat adversaries, including great powers' proxies and irregular surrogates, and succeed in a wide range of contingencies in both physical and informational domains. In order to establish and reinforce IW as a core competency, I2C will engage in operational assessment, concept development, and independent validation of unique prototype capabilities to identify, confront, and defeat evolving threats across the range of military operations as well as those below the threshold of conventional war. ***FY 2024 Plans:*** In FY 2024, the I2C Subgroup plans to initiate funding four (4) projects in areas focused on: 1. Enhancing our ability to operate in the information domain and effectively compete and achieve influence advantage, with China as the pacing challenge; 2. Supporting integrated deterrence; 3. Building enduring advantages. Examples include, but are not limited to: • Defining and developing new capabilities for the modern Psychological Operations (PSYOP) enterprise that are ready for integration into PSYOP curriculum and doctrine. • Development of a system consisting of cameras, communications equipment and other low-cost sensors that can be used at scale by commercial fishing fleets to enable maritime domain awareness to counter illegal, unreported and unregulated fishing (IUUF). • Leveraging data science and machine learning research to apply prompting approaches for conversing with large language models (LLMs) in non-English languages to support pre-testing and target audience analysis during influence operations. • Supporting an independent, third-party review of the current state of generative AI acquisition, development, gaps and opportunities across the DoD relevant to information operations.	5.766	6.668	6.336

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2024, the I2C Subgroup plans to continue funding one (1) project focused on: 1. Enhancing our ability to operate in the information domain and effectively compete and achieve influence advantage, with China as the pacing challenge; 2. Supporting integrated deterrence; 3. Building enduring advantages. Examples includes: • Development of a low-cost multi-role platform to enable influence, surveillance and kinetic strike in grey zone and denied area operations. In FY 2024, the I2C Subgroup plans to complete funding five (5) projects in areas focused on: 1. Enhancing our ability to operate in the information domain and effectively compete and achieve influence advantage, with China as the pacing challenge; 2. Supporting integrated deterrence; 3. Building enduring advantages. Examples include, but are not limited to: • A unique technical solution that overcomes difficulties addressing mis- and dis-information at scale on Social Media platforms TikTok and Telegram. • Development of small containers, or “Air Delivery Vehicles” (ADVs) that can be safely air dropped individually or in clusters from offset locations to deliver any electronic, medical, or other device that is able to fit within its payload parameters. • Development of an application for the Android Tactical Assault Kit (ATAK) that allows users to share and visualize civil information across the Interagency (IA) necessary to drive whole-of-government influence operations. • Development of an advanced audience segmentation and psychographic characterization suite for use in target audience analysis, influence campaign development, and enhanced assessment. • Development of an Information Warfare Enabler Kit, Detachment (IWEK-D) to ensure interoperability of proposed COTS solutions and enable Psychological Operations Detachments (PSYDETs) the flexibility to operate across different operational environments while updating equipment to the modern industry standard. ***FY 2025 Plans:*** In FY 2025, the I2C subgroups plans to complete funding five (5) projects in areas focused on: 1. Enhancing our ability to operate in the information domain and effectively compete and achieve influence advantage, with China as the pacing challenge; 2. Supporting integrated deterrence; 3. Building enduring advantages. Examples include, but are not limited to: • Completing the development and initial operational testing of a low-cost multi-role platform to enable tactical level influence, surveillance and kinetic strike in grey zone and denied area operations. • Completing the definition and development of new capabilities for the modern PSYOP enterprise that are ready for integration into PSYOP curriculum and doctrine. • Completing a capability that leverages data science and machine learning research to apply prompting approaches for conversing with LLMs in non-English languages to support pre-testing and target audience analysis during influence operations.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Completing development of a system consisting of cameras, communications equipment and other low-cost sensors that can be used at scale by commercial fishing fleets to enable maritime domain awareness in order to counter IUUF. • Completing an independent, third-party review of the current state of generative AI acquisition and development across the DoD relevant to information operations. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in funding is reflective of Departmental priorities and budgetary adjustments. The mission has shifted towards the development of novel capabilities, methodologies, and approaches to more effectively compete and achieve influence advantage across the informational, physical and cognitive domains.			
Title: Protection, Survivability, and Recovery (PSR)	6.071	6.761	5.383
Description: The Protection, Survivability, and Recovery Subgroup's objective is to develop new equipment, standards, reference tools, and emerging counter-unmanned aerial system (C-UAS) technologies, to improve the protection of personnel and critical infrastructure. Projects focus on leveraging innovative technologies such as automated information management systems, communication devices, tagging, tracking, and locating devices, mobile surveillance systems, personal and vehicle protection equipment, as well as UAS detection and mitigation systems to enhance protection and survivability of personnel. ***FY 2024 Plans:*** For FY 2024, the PSR Subgroup plans to initiate funding 2 project, together with our Allies and partners, in areas focused on improving the speed and accuracy of C-UAS detection and mitigation capabilities in both urban and remote locations against DoD Group 1 to Group 3 UAS, to include the use of directed energy. Also, in FY 2024, the PSR Subgroup plans to initiate funding 2 projects in areas focused on protection and survivability. Examples include, but are not limited to: • Develop an optical lock-and-track capability combined with a remote weapon system platform for hard-kill defeat. • Integrate a detection system with an autonomous sUAS platform canister and launch system. • Development of a face shield for military insertion missions. • Development of a helmet liner improving blunt impact protection for use in the Ops-Core family of tactical head-borne systems. In FY 2024, the PSR Subgroup plans to continue funding 8 projects in areas focused on improving the speed and accuracy of C-UAS detection and mitigation capabilities with our Allies and partners, and protection and survivability. Examples include, but are not limited to: • Development of multi-mission UAS that could perform C-IED and C-UAS missions on top of ISR missions. • Development of advanced optical ground-based detection systems to detect small UAS. • Continue Develop a CUAS system that enables protection of point targets and strategic sites. • Characterize the blast overpressure and acoustic exposure from small arms to operator, to elucidate which small-arms and conditions are associated with increased risk of potentially harmful exposure levels.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2024, the PSR Subgroup plans to complete funding 19 projects in areas focused on improving the speed and accuracy of C-UAS detection and mitigation capabilities with our Allies and partners, and protection and survivability. Examples include, but are not limited to: • Development of a standard, low-cost test fixture and operating instructions to assess the performance and efficacy of non-pneumatic limb tourniquets. • Development of a standard, ceramic-faced ballistic plate that will result in a fully densified ceramic that can be used in a highly curved ceramic system, for use in female fit body armor. • Development of a system that will baseline and track multiple elements of patient information, and wirelessly provide continuous updates and trends for triage decisions. • Development of advanced optical ground-based detection systems to detect sUAS. ***FY 2025 Plans:*** In FY 2025, the PSR Subgroup plans to continue funding 3 projects, together with our Allies and partners, in areas focused on improving the speed and accuracy of C-UAS detection and mitigation capabilities, to include directed energy; and protection and survivability. Examples include, but are not limited to: • Develop a versatile and effective testing infrastructure for use in evaluating performance of UAS and C-UAS systems. • Evaluate and observe the technologies applying to and attending the CUAS Sandbox FY 2025, the PSR Subgroup plans to complete funding 8 projects in areas focused on improving the speed and accuracy of C-UAS detection and mitigation capabilities with our Allies and partners, and protection and survivability. Examples include, but are not limited to: • Development of a small arms overpressure measurement system and database to collect data relevant to mild Traumatic Brain Injury (mTBI) research. • Development of a radar system to detect small UAS in urban environments. • Development of a face shield for military insertion missions. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of Core funding allows for an increased focus on the Congressionally directed and funded Counter-UAS RDT&E program with Israel.			
Title: Expeditionary Force Protection (EFP)	6.062	7.715	6.882
Description: The Expeditionary Force Protection (EFP) Subgroup's objective is to rapidly develop and transition expeditionary force protection capabilities and technologies to support forward deployed and domestic military, international partners,			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
interagency and first responders for Blast Effects and Mitigation; Maritime Security; Screening, Observation, Detection, and Protection; and Subterranean Environments. EFP projects focus these technology development efforts for expeditionary advance based operations, forward operating bases, subterranean operations, counter-tunnel, and maritime port and littoral environments. ***FY 2024 Plans:*** In FY 2024, the EFP Subgroup plans to initiate funding for 4 projects in areas focused on 1) Integrated deterrence with counterparts across USG and Allies and Partners, 2) develop warfighting capabilities together with those of our Allies and partners, 3) sharpen the Joint Force's technological edge, and 4) develop key enabling capabilities, and deepen interoperability. Examples include, but are not limited to: • Development of an inertial navigation system using a unique communications capability to provide units of action with the ability to project exact location of friendly forces in subterranean locations. • Classified study on geotechnical data. • Development of a subterranean tactical room clearing marker with additional sensors and communications reach back for force protection. In FY 2024, the EFP Subgroup plans to continue funding for 28 projects in areas focused on 1) integrated deterrence with counterparts across USG and Allies and Partners, 2) gain and sustain military advantages, sharpen the Joint Force's technological edge, and 3) develop key enabling capabilities, and deepen interoperability. Examples include, but are not limited to: • Development of a covert underwater (UW) night vision capability to support remote operations at night in shallow, turbid water environments. • A man-dive form-fit-function testing of industry prototype active and passive diver thermal systems in support of long endurance, cold water, combat diving operations. • Development of a Small Autonomous Unmanned Aerial System (S-UAS), delivered through either a borehole and capsule, or by hand launch, to reconnoiter and map large expanses of subterranean facilities. • Development of a testing and training fixture that will closely replicate subterranean and hard and deeply buried targets to allow for Units of Action to research and develop technological solutions. • A subterranean operations pilot course that provides the Department of Defense and Interagency a holistic overview of the operational level considerations for planning and executing missions. For FY 2024, the EFP Subgroup plans to complete funding for 36 projects in areas focused on 1) integrated deterrence with counterparts across USG and Allies and Partners, 2) gain and sustain military advantages, develop our warfighting capabilities together with those of our Allies and partners, 3) sharpen the Joint Force's technological edge, develop key enabling capabilities,			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
and deepen interoperability, 4) improve the speed and accuracy of detection and targeting. Examples include, but are not limited to: • Integration of Human Injury Prediction (HIP) for Vulnerability Assessment and Protection Option (VAPO) 7 to effectively and accurately model the effects of an explosive event. These effects include air blast propagation, fragmentation effects and patterns, human injury models, etc. • Operational test and evaluation of a handheld anomaly detection wand to detect both non-metallic and metallic objects concealed under or in clothing to support checkpoint screening and security personnel. • Development and improvement of a subterranean geophysical survey kit, configured to be expeditionary, that simplifies field operations and equipment requirements to enable more efficient data acquisition, analysis, and generation of intelligence products. • Development and testing of handheld/chest worn version of a mapping capability for subterranean environments, which creates unique 2D and 3D maps in real time. • Development of a platform that utilizes a network of airborne sensors to detect subterranean targets. • Development and evaluation of an airborne system that can detect specific subterranean aspects without requiring line of sight. ***FY 2025 Plans:*** In FY 2025, the EFP Subgroup plans to continue funding 7 projects in areas focused on 1) integrated deterrence with counterparts across USG and Allies and Partners, 2) gain and sustain military advantages, 3) develop our warfighting capabilities together with those of our Allies and partners, 4) sharpen the Joint Force's technological edge, 5) develop key enabling capabilities, and deepen interoperability, 6) develop new capabilities, including long-range strike, undersea, hypersonic, and autonomous systems, and improve intelligence and information sharing, and the integration of non-kinetic tools, and 7) improve the speed and accuracy of detection and targeting. Examples include, but are not limited to: • Hosting bi-annual data exchange with foreign partners to leverage assets and capabilities to support each country's research efforts in the area of maritime security. • Development, integration and operational test and evaluation of an extended coverage system for border protection. • Development of an inertial navigation system using a unique communications capability to provide units of action with the ability to project exact location of friendly forces in subterranean locations. In FY 2025, the EFP Subgroup plans to complete funding 25 projects in areas focused on 1) integrated deterrence with counterparts across USG and Allies and Partners, 2) gain and sustain military advantages, 3) develop our warfighting capabilities together with those of our Allies and partners, 4) sharpen the Joint Force's technological edge, 5) develop key enabling capabilities, and deepen interoperability, 6) develop new capabilities, including long-range strike, undersea, hypersonic, and			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
autonomous systems, and improve intelligence and information sharing, and the integration of non-kinetic tools, 7) improve the speed and accuracy of detection and targeting. Examples include, but are not limited to: • Classified special technical collection project to develop a small form factor collection capability. • Development of a small form factor 3D mapping and scanning device incorporated on a robotic moving platform while navigating and performing obstacle avoidance. • Development of a testing and training fixture that will closely replicate subterranean and hard and deeply buried targets to allow for Units of Action to research and develop technological solutions. • Development and testing of a miniature/tactical version of the Tunnel 3D mapping capability for subterranean environments, which creates unique 2D and 3D maps in real time. • Development of a monitoring system for subterranean targets. • Modification of the current GMV 1.1 Flyer vehicle's power train to an electrification vehicle achieving an operational range, under load, of 250 miles in order to support hard target defeat. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of Core funding allows for an increased focus on the Congressionally directed and funded Counter Tunnel RDT&E program with Israel.			
Title: SURVEILLANCE, COLLECTION AND OPERATIONS SUPPORT	15.180	10.801	11.918
Description: The Surveillance, Collection, and Operations Support (SCOS) Subgroup's objective is to identify high-priority user requirements and special technology initiatives. SCOS projects enhance U.S. intelligence capabilities to conduct retaliatory or preemptive operations and reduce the capabilities and support available to our adversaries with China as the Pacing Threat, Russia as the Acute Threat, and Violent Extremist Organizations. ***FY 2024 Plans:*** In FY 2024, the SCOS Subgroup plans to initiate funding nine (9) projects in areas focused on: 1. Developing key enabling capabilities and deepen interoperability; 2. Improving intelligence and information sharing; 3. Building resilience in cyber and space domains; 4. Developing our warfighting capabilities together with those of our allies. Examples include, but are not limited to: • A classified project to develop a small form factor collection capability. • Five classified projects to develop special communications that have low detectability and improved range. • A classified project to develop technology to collect data from heavy machinery. • A classified project to detect and capture advanced telematics. • A classified project that develops a field device capable of generating and using waveforms for operations.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2024, the SCOS Subgroup plans to continue funding eight (8) projects in areas focused on: 1. Developing key enabling capabilities and deepen interoperability; 2. Improving intelligence and information sharing; 3. Building resilience in cyber and space domains; 4. Developing our warfighting capabilities together with those of our allies. Examples include, but are not limited to: • Development of RFIC and initial transceiver devices from previously developed microchips. • Support to an intelligence community working group that focuses on solving communications, access, and surveillance requirements. • Development of a classified small form factor technical collection capability. • Development of a classified small form factor data storage capability. In FY 2024, the SCOS Subgroup plans to complete funding eleven (11) projects in areas focused on: 1. Developing key enabling capabilities and deepen interoperability; 2. Improving intelligence and information sharing; 3. Building resilience in cyber and space domains; 4. Developing our warfighting capabilities together with those of our allies. These 11 projects include 5 projects from the inclusion of the Forensics Exploitation and Identity Operations (FEIO) Subgroup. Examples include, but are not limited to: • A classified project to develop stratosphere operations and tactics. • A classified project to develop an electromagnetic signals signature reduction capability. • A classified project to develop a facial recognition risk reduction capability. • A classified project to develop a closed-circuit television risk reduction capability. • A project to develop a travel and identity document reference database for 24 hour a day security and forensic operations. ***FY 2025 Plans:*** In FY 2025, the SCOS Subgroup plans to continue funding two (2) projects in areas focused on: 1. Developing key enabling capabilities and deepen interoperability; 2. Developing our warfighting capabilities together with those of our allies. Examples include, but are not limited to: • Development of RFIC and initial transceiver devices from previously developed microchips. • Support to an intelligence community working group that focuses on solving communications, access, and surveillance requirements.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2025, the SCOS Subgroup plans to complete funding fifteen (15) projects in areas focused on: 1. Developing key enabling capabilities and deepen interoperability; 2. Improves intelligence and information sharing; 3. Builds resilience in cyber and space domains; 4. Developing our warfighting capabilities together with those of our allies. Examples include, but are not limited to: • • A classified project to develop a small form factor collection capability. • Six classified projects to develop special communications that have low detectability and improved range. • A classified project to develop technology to collect data from operations heavy machinery. • A classified project to detect and capture advanced telematics. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in funding is reflective of Departmental priorities in special communications, cyber technology, signature management, and exploitation of identity intelligence.			
Title: Tactical Offensive Support (TOS) ***Description:*** The Tactical Offensive Support (TOS) Subgroup's mission is to execute rapid research and development projects and deliver superior capabilities with training to DoD and Interagency special operations tactical teams. The development focus is enabling small tactical units by providing state of the art overmatch capabilities in: Offensive Systems; Tactical Communications; Tactical Reconnaissance, Surveillance, and Target Acquisition Systems; and Specialized Infiltration, Access and Exfiltration Systems. ***FY 2024 Plans:*** In FY 2024, the TOS Subgroup plans to initiate funding six (6) projects in areas focused on increasing lethality by: 1. Improving anti-access/area-denial-insensitive strike capabilities to defeat our adversaries at greater range; 2. Improving resiliency, by building information, decision, and C5ISR advantages, and enhancing survivability. Examples include, but are not limited to: • An unmanned ground system that integrates emerging quadrupedal robots with remote weapon platforms and advanced external optics to provide remote ground reconnaissance, surveillance, close to medium-range target acquisition, and small arms direct action capability. • A tailored, portable laser with an internal power source and cooling system, optimized for weight and accurate target engagement, capable of multiple aimed energy pulses at varying strengths that create damaging or disorienting effects on specified materials or infrastructure nodes and systems at close, medium and long ranges, without the threat of being detected by the enemy. • A next-generation lightweight machine gun tripod that facilitates rapid emplacement, increased accuracy with improved traverse and elevation, reduces overall operational load and is compatible with all current and future weapons platforms.	9.680	11.951	12.853

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• A caliber-specific, hybrid flash hider, suppressor, and muzzle brake contained in one easy to install device that will increase small tactical team lethality and allow operators to conduct target engagement with less potential for compromise. • Anti-jamming (AJ) algorithm updates to enhance a current suite of handheld and vehicle-borne "fighting radios" with Reinforcement Learning (RL) firmware capable of autonomous 'threat characterization' of an adversary's EW tactics, and then facilitating adaptive network behaviors that 'cyber-harden' SOF data transmissions and enhance low probability of detection & interception (LPD/LPI) capabilities in an IW environment. In FY 2024, the TOS Subgroup plans to continue funding three (3) projects in areas focused on increasing lethality by: 1. Improving anti-access/area-denial-insensitive strike capabilities to defeat our adversaries at greater range; 2. Improving resiliency, by building information, decision, and C5ISR advantages, and enhancing survivability. Examples include, but are not limited to: • Development of a hybrid flash hider, suppressor, and muzzle brake contained in one easy-to-install device, for multiple calibers of weapons, that overall reduces the weapons' signature and lessens recoil impulse. • Continue development of a remotely operated lighting harness integrated with GPS for canines that handlers can operate based on mission activities. In FY 2024, the TOS Subgroup plans to complete funding nineteen (19) projects in areas focused on increasing lethality by: 1. Improving anti-access/area-denial-insensitive strike capabilities to defeat our adversaries at greater range; 2. Improving resiliency, by building information, decision, and C5ISR advantages, and enhancing survivability. Examples include, but are not limited to: • A weapon system, including supermatch, subsonic, and armor piercing incendiary ammunition, to increase hit potential by 50%, and lethal effects at extreme distances. • An improved, multi-purpose type cartridge with increased muzzle velocities that demonstrates consistent accuracy to defeat current barriers at extended ranges. • A tactical deployment and recovery capability for US and UK Navy SOF surface and subsurface assets that increases environmental protection and improved signature reduction while ensuring direct interoperability between US and UK forces. • An overmatch optic that can be mounted on currently fielded small arms weapons, providing instant range, tracking and firing solution, for both ground and small Unmanned Aerial System (sUAS), during day and night operations at extended ranges. • An advanced field-configurable, multi-role, sUAS platform designed to maneuver from outdoors to indoors that can selectively detect, identify, track, distract and/or destroy a variety of targets throughout complex urban terrain, utilizing organic ISR and 'plug-and-play' lethal payload capabilities as required. • A low cost, hand-launched and recovered, fast VTOL loitering munition that employs Electro-Optical and Infrared sensors for both day and night operations to improve SOF force protection and rapid attack capability.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• An advanced intermediate-caliber cartridge, side-fed Lightweight Assault Machine Gun (LWAMG) that allows machine gunners to provide effective volumes of fire and on-target performance at increased ranges ***FY 2025 Plans:*** In FY 2025, the TOS Subgroup plans to continue funding one (1) project in area focused on increasing lethality by improving anti-access/area-denial-insensitive strike capabilities to defeat our adversaries at greater range. Example includes: • A tailored, portable laser with an internal power source and cooling system, optimized for weight and accurate target engagement, capable of multiple aimed energy pulses at varying strengths that create damaging or disorienting effects on specified materials or infrastructure nodes and systems at close, medium and long ranges, without the threat of being detected by the enemy. In FY 2025, the TOS Subgroup plans to complete funding ten (10) projects in areas focused on increasing lethality by: 1. Improving anti-access/area-denial-insensitive strike capabilities to defeat our adversaries at greater range; 2. Improving resiliency, by building information, decision, and C5ISR advantages, enhancing survivability. Examples include, but are not limited to: • A higher magnification optic equivalent to new and advanced extreme long-range weapon systems, that allows positive identification at extreme long ranges, with a digital overlay capable of receiving and displaying external information, such as target distance, as well as ballistic and weapon data. • A caliber-specific, hybrid flash hider, suppressor, and muzzle brake contained in one easy to install device that will increase small tactical team lethality and allow operators to conduct target engagement with less potential for compromise. • A remotely operated lighting harness integrated with GPS, camera, and physiological sensor for canines that handlers can operate based on mission activities. • An advanced clip-on lens that attaches to existing INOD thermal weapon sights and allows substantial improvements to a sniper's extreme range target engagement capability, while maintaining a full field of view in their day and night optics. • A next-generation NDAA compliant, cyber-hardened offensive UAS using assured navigation and network communications, integrated AI, operator-controlled autonomy and advanced-lethality payloads that can fly, identify and destroy targets unhindered by current and evolving counter-UAS defenses. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in funding reflects an expected growth in RDT&E support for INDOPACOM and USSOCOM to improve US SOF, DoD and foreign partners tactical capabilities that increase lethality and improve tactical communications.			
Title: Human Performance and Training (HPT)	6.372	7.745	8.067
Description: The Human Performance and Training (HPT) Subgroup's objective is to provide SOF, DoD, and interagency partners with agile, rapid response, R&D capabilities for optimizing performance in the operational environment and increasing			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
readiness for tomorrow's threats. To meet this objective, the subgroup develops human-centered technologies that are performance outcome focused in the areas of immersive learning technology, human performance optimization, and innovative training and educational concepts. HPT's capabilities are implemented globally to prepare for critical missions in any operational environment to identify, disrupt, and defeat threats. ***FY 2024 Plans:*** In FY 2024, the HPT Subgroup plans to initiate 5 projects in areas focused on 1) gaining and sustaining military advantages, 2) building resilience in cyber and space domains, 3) developing our warfighting capabilities together with those of our allies and partners, and 4) enhancing human performance and training. Examples include, but are not limited to: • An augmented reality system for increased training realism of high-risk scenarios through the mixing of real-world environments and virtual objects/entities. • A Program of Instruction (POI) to teach basic jungle tactics and provide a common-core institutional knowledge base regarding the type of warfare encountered against peer threats in SOUTHCOM and INDOPACOM. • A series of three (3) courses focused on SF operational and tactical core activities in space. In FY 2024, the HPT Subgroup also plans to complete 9 projects in areas focused on 1) sharpening the joint force's technological edge, 2) gaining and sustaining military advantages, 3) developing our warfighting capabilities together with those of our allies and partners, 4) building resilience in cyber and space domains, 5) seeding opportunities in biotechnology, quantum science, advanced materials, and clean-energy technology, and 6) enhancing human performance and training. Examples include, but are not limited to: • A synthetic Internet sandbox to enable intelligence analysts and information operations personnel to train on tools and methodologies for the collection, analysis, and exploitation of adversary's online information, as well as engaging in large-scale Unconventional Warfare (UW) exercises, while mitigating the challenges and risks associated with training on the open, publicly visible Internet. • Techniques for developing accurate and realistic 3D virtual cities for immersive, virtual reality-based pre-deployment operations training, mission planning, and mission rehearsal. • An AC-130J Virtual Reality Combat Mission Trainer to enable operational crews to engage in mission tasks within a simulated environment that replicates sensory information of real-world mission performance found in joint mission essential task (JMET) environments. • A multi-sensory (e.g., visual, auditory, tactile) and immersive military freefall jump master simulator to enhance classroom training and rehearsal of spotting techniques and aircraft procedures over virtual drop zones (DZ) modeled after real world DZs prior to going up in the air.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Advanced Cyber Physical Testbeds that integrate real-world sophisticated hardware and software rather than virtualized instantiations of peer and near-peer adversaries' operating environments in order to train SOF cyber operators to conduct full spectrum cyber effects operations on par with peer and near-peer adversaries. • Simulation-based immersive training to expose inexperienced military working dog (MWD) handlers to a broad range of tactical decision-making scenarios and dog behaviors prior to and as an integral part of working with a real-world MWD. ***FY 2025 Plans:*** In FY 2025, the HPT Subgroup plans to continue 1 project in areas focused on 1) gaining and sustaining military advantages and 2) enhancing human performance and training: • A POI to provide the knowledge and skills to manufacture the components of unmanned systems (UxS) using equipment organic to the team. In FY 2025, the HPT Subgroup plans to complete 4 projects in areas focused on 1) gaining and sustaining military advantages, 2) building resilience in cyber and space domains, 3) developing our warfighting capabilities together with those of our allies and partners, and 4) enhancing human performance and training. Examples include, but are not limited to: • A virtual reality environment that allows personnel to immerse themselves in an accurate and realistic digital twin of any environment and move naturally for improved mission planning and rehearsal. • Special Operations Forces biometric assessment methods to illuminate the stresses of operations involving dense urban and subterranean environment. This data will be used to develop training interventions to mitigate these stresses before, during, and after mission execution. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase reflective of Departmental priorities in human performance optimization, cyber and space training, and immersive learning technology.			
Accomplishments/Planned Programs Subtotals	68.407	75.593	76.639

	FY 2023	FY 2024
Congressional Add: Combating Terrorism Technology Support (CTTS)	80.500	-
FY 2023 Accomplishments: FY 2023 congressional add supports the CTTS Tunneling program, Counter-UAS, Sub-Captivating Munitions, & AI in Explosive Ordinance Disposal.		
Congressional Adds Subtotals	80.500	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603122D8Z / *Combating Terrorism Technology Support*	**Project (Number/Name)** 484 / *Combating Terrorism Technology Support (CTTS)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	183.128	26.310	27.078	30.007	-	30.007	51.891	44.007	45.346	47.109	-	-
313: *Foreign Comparative Testing*	183.128	26.310	27.078	30.007	-	30.007	51.891	44.007	45.346	47.109	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland, Deter Strategic and Regional Aggression, and Build a Resilient Joint Force and Defense Ecosystem.

The Foreign Comparative Testing (FCT) Program increases Joint Force readiness and lethality by providing near-term solutions to existing and future Department of Defense (DoD) capability gaps by leveraging the Research & Development (R&D) investments of allied nations and coalition partners. The FCT Program Element (PE) evaluates prototypes derived from allied and partner nation technologies to provide the U.S. Armed Services, U.S. Special Operations Command (USSOCOM), and Defense Agencies capabilities to counter emerging threats.

In FY 2025, the FCT Program will expand with a campaign of cooperative/collaborative experimentation with allies and partners to evaluate applications of innovative foreign capabilities in response to changes in the global security environment. The focus and intent of these cooperative/collaborative efforts is to develop flexible deterrent options that prioritize interoperability while increasing resiliency in the defense ecosystem by working even more closely with our network of allies and partners around the globe. The FCT Program’s broad reach across our allies and friendly foreign countries enables development of innovative, cost effective, and interoperable solutions to meet needs communicated by the Joint Chiefs of Staff and the Combatant Commanders. FCT strengthens alliances by facilitating international collaboration and evaluating technologies that increase interoperability while serving as a catalyst for teaming and other business relationships between international and domestic industries.

Partner Nations recognize the long-term value of the "two-way street" for Defense procurements for which FCT provides an avenue. Numerous successful projects have resulted in the licensed production of a qualified foreign item in the United States, including the creation of jobs and contributions to local economies. To date, companies from 34 states have benefited from FCT projects. FCT supports DoD best practices by incentivizing the use of prototyping and experimentation in advancing technological solutions to warfighter problems and acts as a hedge against threat developments. FCT enhances affordability by reducing development costs and risk, accelerating acquisition timelines, and increasing competition. Through increasing joint lethality and readiness, strengthening alliances, and delivering affordable performance on accelerated timelines, FCT supports the National Defense Strategy and the Under Secretary of Defense for Research and Engineering (OUSD R&E) Critical Technology Areas. Authorized by Title 10, U.S. Code, Section 2350a (g), the FCT program is managed by the Office of the Under Secretary of Defense for Research and Engineering (OUSD R&E), International Prototypes and Experiments (IP&E) Office and projects are jointly conducted by the Military Services and USSOCOM.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603133D8Z *I Foreign Comparative Testing*

Measurable Outcomes:
Over its 43-year history, FCT has a transition rate of 52 percent (399 out of 774) for completed projects. Of the 399 projects that tested successful, 306 or 77 percent resulted in follow-on procurements of over $12.625 billion.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	26.802	27.078	27.612	-	27.612
Current President's Budget	26.310	27.078	30.007	-	30.007
Total Adjustments	-0.492	0.000	2.395	-	2.395
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.489	-			
• Cancelled Account	-0.003	-	-	-	-
• Program Adjustment - FCT Increase	-	-	2.395	-	2.395

Change Summary Explanation

FY 2023 change in Current President's Budget from Previous President's Budget is due to SBIR/STTR (-$0.489 million) and Cancelled Accounts (-$0.003 million) reductions.

A planned funding increase of $23.806 million in FY 2025 has been reduced by $21.000 million and realigned to Service RDT&E and Procurement PEs to fund DoD selected efforts needed to meet operational needs. A reduction of (-$0.514 million) was applied to meet DoD overall funding reductions, which were spread to mitigate impact. A funding increase of $0.103 million for Economic Assumptions was applied.

Remaining $2.395M increase advances the National Defense Strategy goal of Building Enduring Advantages by bolstering international engagement and collaboration with allies and partners to fortify our defense ecosystem (funding realigned from Technology Innovation Program Element 0603375D8Z and Trusted & Assured Microelectronics Program Element 0605294D8Z).

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603133D8Z / *Foreign Comparative Testing*	Project (Number/Name) 313 / *Foreign Comparative Testing*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
313: *Foreign Comparative Testing*	183.128	26.310	27.078	30.007	-	30.007	51.891	44.007	45.346	47.109	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Foreign Comparative Testing (FCT) Program Element funding supports projects that test and evaluate innovative technologies already developed by Partner Nations, and in doing so, directly aligns to the National Defense Strategy through increasing joint lethality in contested environments, strengthening partnerships, and fostering reform through delivery of capability at the speed of relevance. Beginning in FY 2025, the FCT Program will also embark on cooperative/collaborative experimentation with allies and partners to evaluate applications of innovative foreign capabilities in response to changes in the global security environment. The focus and intent of these cooperative/collaborative efforts is to develop flexible deterrent options and increase resiliency in the defense ecosystem by working even more closely with our network of allies and partners around the globe. FCT individual projects typically average less than $1.000 million each and complete within 12-36 months. Cooperative/collaborative experimentation projects typically will average between $1.000 and $3.000 million each and complete within 24 – 36 months. Projects are proposed by the Military Services and U.S. Special Operations Command (USSOCOM) and are selected using a merit-based process that identifies the most promising, innovative, and cost-effective solutions to validate warfighter requirements, with an emphasis on transitioning technologies into current or future programs of record. Project selection is based on potential to yield cost, schedule, or performance improvements over the status quo.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Norwegian Advanced Surface to Air Missile System (NASAMS) Operational Assessment (Air Force/Space Force)	0.000	-	-
Description: This project conducts an operational assessment of the NASAMS fire distribution center integrated with the Combined Joint Task Force Horn of Africa Integrated Air and Missile Defense architecture. NASAMS provides a more affordable air and missile defense capability option against emerging unmanned aerial vehicles and land attack cruise missile threats. NASAMS initiated the project and test article contract in FY 2022, awarded the test article contract and conducted test planning in 1Q FY 2023, conducted operational simulations and evaluations in 2/3Q FY 2023, and will complete final integration and closeout reports in 4Q FY 2023. This project continued in FY 2023 with FY 2022 funds. This technology will be available for rapid transition to regional Combatant Commands as required.			
Title: Semi-Autonomous Devices for Medical Care (Army)	0.000	-	-
Description: This project evaluates commercially available interoperable medical devices such as ventilators and intravenous pumps that are remotely controlled. These devices provide improvements in the quality and safety of patient care by enabling immediate adjustment of device settings without requiring a human to physically be present. This project completed phase I			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
laboratory testing in FY 2022, phase II non-clinical device interoperability testing in 2Q FY 2023, and final test and closeout reports in 3Q FY 2023. This project continued in FY 2023 with FY 2022 funding. This technology will transition to the Army's Military Medical Development Activity for follow-on specific operational testing and requesting Food and Drug Administration clearance prior to procurement and fielding.			
Title: Skywall Auto Response (Army) ***Description:*** This project evaluates a non-kinetic counter unmanned aerial system for vehicles and fixed site configurations. This technology increases the probability of defeat while reducing collateral damage. This technology is of interest to all Services and other government agencies. Test articles were received in FY 2022, completed test and demonstration events in 1Q to 3Q FY 2023, and will complete final test and closeout reports in 4Q FY 2023. This project continued in FY 2023 with FY 2022 funding This technology will transition to the Army's Program Manager for Soldier Lethality and the Air Force Life Cycle Management Center for follow-on procurement and fielding.	0.000	-	-
Title: Advanced Closed Cycle Hull Cleaning (Navy/USMC) ***Description:*** This project comparatively tests robotic systems that capture and treat marine biofouling collected during underwater hull cleaning operations. This will improve the DoD's global environmental compliance posture and increase operational readiness as existing methods of hull cleaning do not comply with new environmental regulations (particularly on the west coast of the United States) due to the creation of biofouling. Comparative testing initiated during FY 2022 and was completed during 2Q FY 2023. Final test and closeout reports will be completed during 3/4Q FY 2023. This project continued in FY 2023 with FY 2022 funding. This effort drives an update to the Naval Sea Systems Command's Salvage and Diving office's hull-cleaning specifications and the technology will transition to hull cleaning service providers as required to meet the new specifications.	0.000	-	-
Title: Cold-Weather All-Terrain Vehicle (Army) ***Description:*** This project comparatively tests off-the-shelf cold weather capable tracked vehicles with enhanced off-road mobility. This accelerates the fielding of a replacement for an obsolete system and enables logistics support in austere conditions. Test articles were received, and initial testing was completed in FY 2022. First article production and testing completed in 1-3Q FY 2023, and final test and closeout reports will be produced in 4Q FY 2023. This project continued in FY 2023 with FY 2022 funding.	0.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
This technology will transition to the Army's Program Executive Office for Combat Support and Combat Service Support for follow-on procurement and fielding through an Other Transaction Agreement.			
Title: Software Defined Acoustic Modem Evaluation (Navy/USMC) ***Description:*** This project comparatively tests commercial software-defined radios in underwater acoustic environments. This technology enables interoperable, reliable, and secure communication between surface and subsurface platforms and sensors. Phase I testing was completed in FY 2022, Phase II in-water testing completed in 1Q FY 2023, and the Phase III final demonstration was conducted in 2Q FY 2023. The final test and closeout reports are expected to complete in 3/4Q FY 2023. This project continued in FY 2023 with FY 2022 funding. This technology will transition to Naval Undersea Warfare Center, Newport Division, for inclusion in follow-on large-scale prototype undersea network demonstration programs and additional evaluation.	0.000	-	-
Title: Individual Assault Munition (Army) ***Description:*** This project evaluates a multi-purpose shoulder fired munition with a tandem warhead capable of defeating both armored vehicles and structures. This technology replaces two weapon systems and provides lethality overmatch in urban environments by enabling fire from enclosed spaces. Performance testing completed in FY 2022, environmental testing was conducted in 1/2Q FY 2023, and final test and closeout reports were completed in 3Q FY 2023. This project continued in FY 2023 with FY 2022 funding. This technology will transition to the Army's Product Director for Combat Armaments and Protection Systems for follow-on procurement and fielding.	0.000	-	-
Title: Lightweight Short Range Guided Missile (USSOCOM) ***Description:*** This project comparatively tests man-portable, shoulder-fired missile systems that utilize seeker technology for engaging static or moving targets at extended ranges. This capability is compared to existing unguided weapons systems within the USSOCOM inventory and provides a more affordable guided munition than the FGM-148 Javelin weapon system. Live-Fire testing was completed in 4Q FY 2022 and final test and closeout reports were completed in 1Q FY 2023. This project continued in FY 2023 with FY 2022 funding. This technology will transition to USSOCOM's Program Executive Office, Special Operations Forces Warrior for follow-on procurement.	0.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Hybrid Vertical Takeoff and Landing (VTOL)/Fixed Wing Unmanned Aerial System (UAS) (Navy/USMC) ***Description:*** This project comparatively tests hybrid VTOL/Fixed Wing UAS to enable increased mission endurance/range, deployment from small boats and vehicles, and significant reduction in ground support footprint and manpower. Performance testing and demonstrations were completed in FY 2022 and final test and closeout reports were completed in 1Q FY 2023. This project continued in FY 2023 with FY 2022 funding. This technology will transition to the Navy's Battlespace Awareness and Information Operations Program Office for follow-on testing and demonstrations to inform future procurement decisions.	0.000	-	-
Title: Low-Cost Vertical Take-Off and Landing Precision Strike System (USSOCOM) ***Description:*** This project evaluates a small, agile loitering munition that can serve as both an Intelligence, Surveillance, and Reconnaissance (ISR) asset and a highly lethal munition, improving operational flexibility and effectiveness. This technology reduces the logistics burden by providing a reusable capability not available with existing loitering munitions. If successful, this technology will transition to USSOCOM's Precision Strike Systems Program of Record for follow-on procurement and fielding.	1.000	-	-
Title: Autonomous Wide Area Surveillance Sensor on small Unmanned Aerial Systems (sUAS) (Navy/USMC) ***Description:*** This project tests a video detection and ranging sensor on a small Group 1 UAS optimized for Maritime Wide-Area Surveillance in support of Naval and Marine Forces in the Littoral Battlespace. This technology autonomously detects small objects on the sea surface over very wide areas, during day and night, and in conditions up to Sea State 6. If successful, this technology will transition to the Navy and Marine Corps Small Tactical UAS Program Office (PMA-263) for follow-on procurement and fielding.	0.175	-	-
Title: Civil Affairs Solution - Army (CAS-A) Analytics with Synthetic Aperture Radar (SAR) Change Detection (USSOCOM) ***Description:*** This project tests intelligence software that fuses imagery from unmanned aerial systems and satellites with other sensor data and uses artificial intelligence and machine learning (AI/ML) to rapidly provide actionable analytics. This technology supports Department of Defense Civil Affairs operations by analyzing population migration caused by conflict or natural disasters to enable dynamic planning for large-scale operations. This project enhances the DoD capabilities in the AI/ML focus area. If successful, this technology will be available for transition to the Army's Distributed Common Ground System Program of Record.	1.310	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Precision Strike Indoor/Outdoor small Unmanned Aerial System (sUAS) (USSOCOM) ***Description:*** This project evaluates an sUAS for use during operations conducted in complex urban terrain, in both indoor and outdoor environments. This technology provides an affordable day/night reconnaissance, surveillance, and target acquisition capability with an optional lethal payload. If successful, this technology will transition to USSOCOM's Ground Organic Precision Strike Systems Program of Record for follow-on procurement and fielding.	0.600	-	-
Title: Comparative Test of 1000 volt Direct Current (DC) Power Systems for Directed Energy (Navy/USMC) ***Description:*** This project comparatively tests a Norwegian off-the-shelf large-scale energy storage system designed for maritime use against a comparable domestic product. This supports development of next generation directed-energy weapon systems for naval platforms. If successful, this technology will transition to the Navy's Guided Missile Destroyer program office to inform requirements for next generation platform development.	0.162	-	-
Title: Future Aviation Ground Power Unit (Army) ***Description:*** This project evaluates a modern, off-the-shelf aviation support system for military rotary wing aircraft. This technology improves aviation maintenance efficiency and reduces aircraft downtime. If successful, this technology will transition to the Army's Product Director for Aviation Ground Support Equipment for follow-on procurement and fielding.	0.040	-	-
Title: Sappheiros Three-Dimensional Unattended Ground Sensors (Army) ***Description:*** This project evaluates a multi-modal sensor system that simultaneously provides terrestrial and subterranean perimeter surveillance. This technology offers increased operational capabilities over existing systems and addresses the associated gaps related to perimeter surveillance. If successful, this technology will transition to the Army's Advanced Unit Perimeter Security System and Marine Corps Tactical Remote Sensor Systems Programs of Record for follow-on procurement and fielding.	0.600	-	-
Title: Target Detection Modernization for Mines (Navy/USMC)	0.500	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: This project evaluates a modern target detection device for application to existing Naval Mines. The device utilizes a multi-sensor suite (inertial, acoustic, photonic, and underwater electric) as well as sensor fusion to better detect, classify, and identify naval target vessels. This effort provides an affordable option to deliver improved performance of naval mines and replaces 20-year-old technology. If successful, the Navy's Mine Warfare Program Office (PMS 495) will transition the technology into the Quickstrike family of shallow-water, air delivered mines through an Engineering Change Proposal (ECP) in collaboration with the Air Force.			
Title: Active Protection System, Hard-Kill (Navy/USMC) ***Description:*** This project evaluates a vehicle mounted system that autonomously detects, tracks, and engages threats with both Hard and Soft Kill countermeasures. This technology increases combat capabilities of light armored vehicles against rocket propelled grenades and anti-tank missiles. If successful, this technology will transition to Marine Corps Program Executive Office for Land Systems for follow-on procurement and fielding on the Amphibious Combat Vehicle through an Engineering Change Proposal.	0.985	-	-
Title: Airborne Threat Discrimination Sensors For Land and Ship Platforms (Navy/USMC) ***Description:*** This project comparatively tests wide-field-of-view electro-optic and infrared sensors for land and ship platforms as a complement to radar. This enables passive detection and tracking of challenging airborne threats. If successful, this technology will transition into relevant programs of record within the Navy's Program Executive Office for Integrated Warfare Systems and the Army's Program Executive Office for Ground Combat Systems.	0.050	-	-
Title: Bridge Connector (Army) ***Description:*** This project evaluates an adapter that allows a floating bridge used by the U.S. Army to be used by German and British amphibious bridging systems. This technology enables enhanced joint multinational bridge operations in the European theatre to maximize limited resources. If successful, this technology will be transferred to U.S. Multi-Role Bridging Companies in Europe for immediate operational use as needed and will be available for additional follow-on procurements to support future operational needs.	0.400	0.300	-
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Testing expected to complete in 2Q FY 2024 and final test and closeout reports anticipated in 4Q FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decreases to zero in FY 2025 as testing concludes and project closes out.			
Title: 2.75" Guided Rocket for Multi-Domain Fast In-shore Attack Craft (FIAC) Engagement (Navy/USMC) ***Description:*** This project evaluates the capabilities of a “fire and forget” 2.75-inch rocket with an advanced Imaging Infrared seeker on an Unmanned Surface Vehicle (USV). This technology provides an effective asymmetric capability against FIAC swarms. If successful, this technology will transition to the Navy's Littoral Combat Ship Mission Modules Program Office for fielding on USVs. ***FY 2024 Plans:*** Test article delivery expected to occur in 2Q FY 2024, Live-Fire testing to occur in 3Q FY 2024, and final test and closeout reports anticipated in 4Q FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decreases to zero in FY 2025 as testing concludes and project closes out.	0.795	0.500	-
Title: Anti-Submarine Warfare Sensor (ASW) for Unmanned Surface Vehicles (USVs) (Navy/USMC) ***Description:*** This project tests compact sonar sensors from Canada and Norway for potential application on U.S. Navy Unmanned Surface Vehicles (USVs). This project provides new capabilities for USVs to conduct ASW operations which are currently conducted by manned platforms. This project addresses the Autonomous Systems Critical Technology Area. A Successful demonstration of the towed sensor was completed at NATO’s Robotic Experimentation and Prototyping using Maritime Uncrewed Systems (REPMUS) annual military exercise in Portugal during 4Q FY 2022. The Hull mounted sensor test article contract was awarded in 1Q FY 2023, test planning occurred in 2/3Q FY 2023, and the test article is expected to be delivered in 4Q FY 2023. If successful, this technology transitions to the Navy’s Unmanned Maritime Systems Program Office for follow on acquisition and fielding. ***FY 2024 Plans:***	-	0.150	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Hull mounted sensor test article integration planned for 1Q FY 2024. Conduct at-sea testing and demonstration at Exercise Solid Curtain during 2Q FY 2024. Complete final test and closeout reports during 3Q to 4Q FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decreases to zero in FY 2025 as testing concludes and project closes out.			
Title: Autonomous Anti-Submarine Warfare (ASW) Training Target (Navy/USMC) ***Description:*** This project evaluates an off-the-shelf autonomous mobile unmanned underwater vehicle that replicates the passive and active acoustic signatures of submarines. This technology provides enhanced ASW training effectiveness over current targets in U.S. Navy inventory and enables torpedo testing capability. If successful, this technology will transition to the Navy's Undersea Weapons Program Office for follow-on procurement and fielding.	0.600	-	-
Title: M213 Fuse / Insensitive Munitions (IM) Hand Grenade (Army) ***Description:*** This project comparatively tests off-the-shelf foreign fuses for the M67 fragmentation hand grenade that exhibit reduced sensitivity to IM stimuli to increase warfighter safety. The legacy M67 was originally developed in the 1960s and does not meet today's IM safety requirements. If successful, this technology will transition to the Army’s Program Executive Office for Ammunition for follow-on procurement and fielding.	0.400	-	-
Title: Lightweight Expeditionary Airfield Surfacing System (Navy/USMC) ***Description:*** This project will evaluate a lightweight aircraft landing mat to replace legacy matting. This technology reduces the logistical footprint and increases installation efficiency for rapid deployment in austere locations. If successful, this technology will transition to the Navy and Marine Corps' Expeditionary Airfields program office for follow-on procurement and fielding. ***FY 2024 Plans:*** Phase I testing expected to complete in 1Q FY 2024. Phase II aircraft trafficking testing expected to complete in 2Q FY 2024. Final test and closeout reports expected in 4Q FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	0.800	0.800	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Funding decreases to zero in FY 2025 as testing concludes and project closes out.			
Title: Enhanced Integrated Fire Control System for M3E1 (Army) ***Description:*** This project comparatively tests advanced fire control systems for the 84-millimeter shoulder fired reloadable recoilless M3E1 Multi-purpose Anti-armor Anti-personnel Weapon System. This technology provides enhanced targeting in both day and night operations at extended ranges. If successful, this technology will transition to the Army's Program Manager for Soldier Lethality for follow-on procurement and fielding. ***FY 2024 Plans:*** Receive phase II test articles in 1Q FY 2024. Conduct phase II testing in 2Q to 3Q FY 2024. Final test and closeout reports expected in 4Q FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decreases to zero in FY 2025 as testing concludes and project closes out.	0.370	1.550	-
Title: High Power Electrical Isolation (Navy/USMC) ***Description:*** This project tests high power electrical disconnect switches to isolate next generation carrier-based aircraft launch and recovery equipment for maintenance and repairs. This technology increases readiness by enabling concurrent operations and maintenance on complex mission critical systems. If successful, this technology will transition the Navy's Aircraft Launch and Recovery Equipment program office for follow-on procurement and fielding through an Engineering Change Proposal to the Electromagnetic Aircraft Launch System and Advanced Arresting Gear programs of record. ***FY 2024 Plans:*** Phase III testing expected to occur in 1Q FY 2024. Phase IV and V testing expected to occur during 2Q to 3Q FY 2024. Final test and closeout reports expected in 4Q FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decreases to zero in FY 2025 as testing concludes and project closes out.	0.402	0.656	-
Title: 6T Lithium-Ion Batteries (Army) ***Description:*** This project comparatively tests foreign lithium-ion 6T batteries with increased energy capacity and longer cycle life against similar domestic products. This technology improves the mission capabilities and availability of military ground vehicles.	0.500	0.500	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
If successful, this technology will be available as an option for procurement through the Defense Logistics Agency. ***FY 2024 Plans:*** Phase III testing expected to occur in 1Q FY 2024. Phase IV and V testing expected to occur during 2Q to 3Q FY 2024. Final test and closeout reports expected in 4Q FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decreases to zero in FY 2025 as testing concludes and project closes out.			
Title: Advanced Compact Unmanned Aerial Vehicle (UAV)-based Radar for All-visibility Targeting (Army) ***Description:*** This project evaluates a sensor system that fuses a compact digital beam forming radar with electro-optic and infrared sensors on Group 2 UAVs. This technology provides a persistent all-weather airborne reconnaissance capability. If successful, this technology will transition to the Army's Program Manager for Terrestrial Sensors for follow-on procurement and fielding. This technology is also of interest to various sensor programs across the DoD. ***FY 2024 Plans:*** Conduct initial performance testing and demonstrations in 1Q FY 2024. Developmental testing expected to occur in 2Q FY 2024. Operational testing and final demonstrations expected to occur in 3Q FY 2024. Final test and closeout reports anticipated in 4Q FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decreases to zero in FY 2025 as testing concludes and project is closed out.	0.622	0.435	-
Title: Dual-mode Precision Guided 120-millimeter Mortar (USSOCOM) ***Description:*** This project evaluates a precision mortar round with both laser and Global Positioning System (GPS) guidance capabilities. This technology provides a tactical indirect fires system to defeat material and armored vehicles with pinpoint accuracy in contested environments. If successful, this technology will transition to USSOCOM's Program Manager for Special Operations Forces Lethality as well as service guided mortar programs for follow-on procurement and fielding. ***FY 2024 Plans:***	0.750	0.500	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Limited User Assessment anticipated for 1Q FY 2024. Final test and closeout reports expected in 2Q FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decreases to zero in FY 2025 as test article procurements and major test events are completed in FY 2024.			
Title: Alternate At-Sea Refueling (Navy/USMC) ***Description:*** This project evaluates a dual-fuel astern hose reel system installed on a commercial Offshore Support Vessel for underway replenishment. This technology provides an expanded logistics capability in contested maritime environments. If successful, the test article will be used for training and the technology will be available for follow-on procurement and fielding by Combatant Commanders to support operational needs.	1.350	-	-
Title: Low-Cost Innovative Projects (Projects Less Than One Million Dollars Each): ***Description:*** The Office of the Under Secretary of Defense for Research and Engineering (OUSD R&E), International Prototypes and Experiments (IP&E) Office, selects multiple low-cost projects in the areas of Force Application, Force Protection, Force Support, Logistics, Artificial Intelligence and Machine Learning, Robotics and Autonomous Systems, Interoperability, and Countering Unmanned Systems. These projects were selected to deliver prototypes for evaluation, assessment, and Service adoption within 12 to 36 months. Soldier Borne Sensor System (Army): This project evaluates next-generation micro unmanned aerial systems with improved sensor capabilities and flight performance characteristics to enable enhanced situational awareness at the squad level. If successful, this technology will transition to the Army's Program Executive Office Soldier for follow-on procurement and fielding through the Soldier Borne Sensor Program of Record. Top Attack Armor (Army): This project comparatively tests improved vehicle protection technology for defeating overhead threats to Armored Fighting Vehicles. This provides protection against modern anti-tank threats while minimizing negative mobility impact. If successful, this technology will transition to the Army's Product Manager for Vehicle Protection Systems for integration into Ground Combat Systems and Next Generation Combat Vehicle Cross Functional Team programs for fielding through an engineering change proposal. Vehicle Mounted Camouflage System (Army): This project comparatively tests vehicle coverings that reduce detection across multiple spectrum bands including infrared, microwave, and radar to increase survivability in contested environments. If successful, this technology will transition to the Army's Product Manager for Vehicle Protection Systems for integration into	13.051	9.485	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Ground Combat Systems and Next Generation Combat Vehicle Cross Functional Team programs for fielding through an engineering change proposal. Water Free Chemical Decontaminant System (Army): This project evaluates a portable decontamination system that does not require water. This technology enables the thorough decontamination of sensitive equipment in forward environments, a capability that does not exist within the DoD today. If successful, this technology will transition to the Joint Program Manager for Chemical, Biological, Radiological, Nuclear Protection for follow-on procurement and fielding. Bacteriophage (Army): This project evaluates commercial phage mixtures for incorporation into a feminine hygiene wipe to selectively kill microbes that cause urinary tract infections (UTIs). Use of phage technology is also potentially applicable to numerous other medical issues and is an approach for combating multidrug resistant microbes. If successful, this technology will transition to a follow-on human study field trial prior to a fielding decision. Nanostructured Graphene Composites for Microwave Attenuation (Army): This project evaluates graphene-based composites for lightweight, low-cost, printable coatings to electromagnetically harden Joint lethality assets against detection and interdiction by enemy Integrated Air Defense Systems. If successful, this technology will transition to the Army's Long Range Precision Fires Cross Functional Team for integration with XM1155 Extended Range Artillery and other related munitions programs. Long Run-Time Thermal Batteries for Long Range Munitions (Army): This project comparatively tests novel electrolyte materials with low-melting temperature to increase thermal battery run time. Longer battery run time is required to support precision guidance capabilities for new rockets and missiles with longer range than legacy munitions. If successful, this technology will be transitioned to domestic thermal reserve battery manufacturers for incorporation into munitions procured by the Joint Program Executive Office for Armaments and Ammunition. Spectrometric Gamma Camera (Army): This project evaluates a portable gamma camera that enables localization, identification, and quantification of the threat coming from a radioactive source at a distance to increase detection performance and operator safety. If successful, this technology will transition to the Mounted Enhanced Radiac Long-Range Imaging Networkable vehicle mounted system by the Joint Program Executive Office for Chemical Biological Radiological Nuclear Defense. Unmanned Military Vehicle Mobility in Arctic Environments (Army): This project evaluates the mobility of a foreign Unmanned Ground Vehicle (UGV) for use on common Arctic surfaces such as snow, packed snow, and ice. This vehicle addresses Arctic mobility needs as described in the U.S. Army’s 2021 Arctic Strategy. If successful, this technology will transition to the Army's Robotic Combat Vehicle Program of Record for follow-on procurement and fielding.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Three-Dimensional Printed Metal Parts (Army): This project comparatively tests foreign and domestic materials for printing three-dimensional metal parts using Fused Filament Fabrication methods as an alternative to traditional manufacturing and laser-based printing methods that are not suitable for use in forward deployed locations. This enables rapid manufacture of metal parts at the tactical point of need and significantly reduces the logistical burden. If successful, best performing materials will transition to various DoD programs for follow-on parts qualification testing and fielding to include the Army's Infantry Battalion Mortar System, the Air Force's M137A1 cannon for the AC-130 gunship, and the Marine Corps' Expeditionary Fabrication laboratory Program of Record. Artificial Intelligence for Off-Road Autonomy (Army): This project evaluates artificial intelligence capabilities through a series of operational challenges, utilizing vision and proprioceptive sensing, machine learning, and intelligence navigation to increase survivability and readiness of current systems. This technology enables navigation in complex military scenarios, providing increased tactical advantage through terrain sensing and increased mobility. If successful, this technology will transition to the Army's Next Generation Combat Vehicle Cross Functional Team for integration into the XM30 Mechanized Infantry Combat Vehicle and Robotic Combat Vehicle programs. Warfighter Water Purification (Army): This project evaluates a man-portable water purification unit that relies on low-temperature plasma to eliminate all microbiological threats from indigenous water to provide potable drinking water at a rate of 5 thousand liters per day. There are currently no fielded devices at this small scale that are able to destroy all microbiological threats in water. If successful, this technology will transition to the Army's Product Manager for Soldier Clothing and Individual Equipment for follow-on procurement and fielding through the Individual Water Treatment Device Program of Record. Space Qualification Testing of Event Based Sensors (Air Force/Space Force): This project comparatively tests neuromorphic imaging sensors and algorithms for potential application to space-based surveillance platforms. This novel sensor technology provides benefits over legacy sensors for size, weight, and power constrained platforms such as small satellites. Results will inform various DoD Missile Warning and Intelligence, Surveillance, and Reconnaissance programs. If successful follow-on application specific technology demonstrations will be developed and explored prior to a fielding decision. Comparative Real Time Air Quality Sensing of Pilot Breathing Lines in High-Performance Aircraft (Air Force/Space Force): This project evaluates an active in-line pilot breathing air monitoring capability in high performance military aircraft. This technology accelerates the delivery of technology that addresses an urgent operational need for the Air Force. If successful, this technology will transition to platform programs of record through the Air Force Life Cycle Management Center Human Systems Office. Event Based Sensing for Moving Target Indication (Air Force/Space Force): This project comparatively tests commercial event-based cameras for intelligence, surveillance, and reconnaissance applications to enable new approaches for affordable,			

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Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
long dwell early warning and moving target detection. This innovative technology could provide an affordable, rapid response surveillance capability. If successful, results will inform various DoD Intelligence, Surveillance, and Reconnaissance programs. Follow-on application specific technology demonstrations will be explored prior to a fielding decision. Air Launched small Unmanned Aerial System (sUAS) for Kinetic Engagement (Air Force/Space Force): This project evaluates the performance of new low-cost, air launched sUAS for multiple, simultaneous kinetic engagements. The air launched sUAS will be integrated into a Common Launch Tube (CLT) (found on numerous AFSOC and USSOCOM platforms) and equipped with Electro-Optic (EO) and kinetic payloads for target acquisition and engagement. This technology provides an affordable precision standoff strike capability with minimal risk to large conventional aircraft or ground forces. If successful, this technology will transition to Air Force Special Operations Command MQ-9 Reaper Medium Altitude Long Endurance-Tactical Unmanned Aerial Vehicle Program of Record through the Air Force Life Cycle Management Center. Low-Cost Supersonic Turbojet (Air Force/Space Force): This project tests an affordable commercially available turbojet engine for supersonic performance at high altitudes. This technology is not currently available from domestic manufacturers and enables swarms of very inexpensive unmanned aerial platforms that can operate at supersonic speeds. If successful, this technology will transition to on-going air launched unmanned aerial vehicle development programs. Precision Vertical Takeoff and Landing Unmanned Aerial System (VTUAS) Recovery (Navy/USMC): This project evaluates a pilot-free, autonomous recovery of Vertical Take-Off and Landing Unmanned Aerial Systems (VTUAS). This technology provides autonomous deployment, operation and recovery of VTUAS while reducing warfighter threat exposure and increasing survivability. If successful, this technology will transition to follow-on demonstration events prior to follow-on procurement and fielding recommendations. Extended Reality (XR) Helmet Mounted Display (HMD) (Navy/USMC): This project comparatively tests commercially available XR HMDs for T-45 operational flight training simulators. This technology provides advantages over virtual reality headsets by allowing users to see and interact with mock cockpits in the real world while simultaneously conducting flight training in a virtual environment. If successful, this technology will transition to Undergraduate Flight Training Systems and Naval Aviation Training Systems and Ranges Program Offices for follow-on procurement and fielding. Organic Precision Fires – Infantry, Light (Navy/USMC): This project comparatively tests Group 1 loitering munitions to provide an organic asset with precise kinetic effects within a Marine Infantry Company. If successful, this technology will transition to the Marine Corps Infantry Battalion Experimentation office for follow-on user evaluations through the Marine Corps Rapid Capabilities Office prior to follow-on procurement and fielding.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Portable High Power Directed Energy Systems for Aviation Support (Navy/USMC): This project evaluates a portable high power laser system capable of removing aircraft corrosion and coatings in operational environments. This technology reduces the health risk to maintenance personnel and increases maintenance efficiency. If successful, this technology will transition to the Navy's Common Aviation Support Equipment Program Office for follow-on procurement and fielding. Beyond Lithium-ion Battery for Expeditionary Warfare Support (Navy/USMC): This project evaluates next generation Lithium-Sulfur battery cells for various military applications including ground vehicles. Lithium-Sulfur batteries provide up to double the energy storage as existing Lithium-ion batteries while also improving safety. If successful, this technology will transition to battery manufacturers as DoD customers such as the Army's Ground Vehicle Systems Center, publish new battery specifications in future solicitations. Micro-Remotely Operated Vehicle (ROV) Rapid Response Underwater Incidents and Threats (Navy/USMC): This project comparatively tests low cost, man portable, micro-ROVs as a rapid response platform for inspection and preparation for neutralization of threat objects in the undersea environment. This technology provides an expeditionary capability to rapidly respond to asymmetric threats. If successful, this technology will transition to the Navy's Maritime Expeditionary Standoff Response (MESR) Program through an Engineering Change Proposal. Minimizing Electromagnetic Emissions Switched Beam Antenna (Navy/USMC): This project evaluates a novel antenna design that combines both omnidirectional and electronically steerable directional beamforms in a single system. This provides increased range and throughput for line-of-sight communications while decreasing risk of detection. If successful, this technology will transition to the Navy's Amphibious Tactical Communication System as well as other applicable service communications programs of record for follow-on procurement and fielding. Fast Rope Insertion/Extraction System (USSOCOM): This project comparatively tests different fast rope designs used by foreign militaries to address domestic production supply chain issues. Fast rope provides a critical capability enabling rapid deployment of personnel from helicopters where aircraft cannot touch down. If successful, new fast ropes will be purchased directly from manufacturers by the Army's Integrated Logistics Support Center. Green Pulsed Lasers for Optical Communications (Navy/USMC): This project comparatively tests compact, high-energy, air-cooled pulsed green lasers to increase the performance of air-to-underwater optical communications. This technology enables secure communications from aircraft to underwater vessels at operationally relevant depths with data rates 100 times higher than existing radio frequency communications. If successful, this technology will transition to the Navy's Undersea Communications and Integration Program Office for insertion into future optical communications programs of record.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Limit of Detection of Rapid Response Fentanyl Strips (Army): This project seeks to determine the precise limit of detection of commercial off the shelf fentanyl test strips. This data is necessary to inform end user requirements prior to field user evaluations and wider military adoption. This technology provides a capability for trace detection of fentanyl in the field to counter emerging threats to military forces. If successful, this technology will transition to the Army's Dismounted Reconnaissance Sets, Kits, and Outfits modernization program for follow-on procurement and fielding. The technology will also be available for purchase by individual units for immediate use as needed. Vehicle Filtration Systems (Army): This project comparatively tests modern NATO approved air filtration systems with unique design attributes against inefficient legacy domestic filters. This technology provides enhanced protection from damaging particles associated with chemical, biological, radiological, and nuclear (CBRN) weapons for military vehicles. If successful, this technology will transition to the Army's XM30 Mechanized Infantry Combat Vehicle Program of Record for follow-on procurement and fielding. Additionally, this technology has applicability to several existing and future planned DoD vehicle programs. Foreign Object Damage Barrier (Navy/USMC): This project evaluates an innovative barrier system to prevent Foreign Object Debris from (FOD) entering paved runways and airfields. This technology reduces FOD incidents by up to 80% which reduces the likelihood of damage to aircraft engines and increases readiness. If successful, this technology will transition to the Navy and Marine Corps Common Aviation Support Equipment program office for follow-on procurement and fielding at tactical land-based airfields. Naval Enhanced Global Positioning System (GPS) Antenna System (Navy/USMC): This project comparatively tests foreign GPS Anti-Jam antennas against existing domestic systems. Foreign technology provides new capabilities such as GPS interference signal direction finding and reduces procurement costs by over eighty percent. If successful, this technology will transition to the Global Positioning System (GPS) Based Positioning Navigation and Timing Service Program of Record for follow-on procurement and fielding on various DoD vehicle platforms. Intelligent Unmanned Ground Vehicle (UGV) for Contested Environments (Navy/USMC): This project will demonstrate the expeditionary utility of an advanced logistics UGV that leverages Artificial Intelligence and Machine Learning to integrate and fuse sensor inputs. This technology provides fully autonomous navigation capabilities during operations in contested environments. If successful, the results of this effort will inform future UGV acquisition requirements including the Marine Corps' Expeditionary Modular Autonomous Vehicle and Army's Robotic Combat Vehicle-Light development programs. High Durability Armor Steel (Navy/USMC): This project comparatively tests the environmental toughness of foreign high hard steels used for ballistic protection in armored vehicle applications. This effort addresses domestic supply chain deficiencies and significantly reduces sustainment costs by providing better quality, more durable, and longer lasting materials. If successful,			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
the Army Research Laboratory will modify existing armor steel specifications and this technology will be adopted by vehicle manufacturers. Ration Heater (Army): This project comparatively tests foreign exothermic ration heater performance, shelf life and safety characteristics. This technology provides a heat source without generation of hydrogen by-product that is potentially flammable or explosive if used in confined spaces. If successful, this technology will transition to the Army's Combat Feeding Directorate for follow-on procurement and fielding through the Meal, Ready-to-Eat Improvement program. Joint Light Tactical Vehicle (JLTV) Force Protection (Army): This project evaluates a novel, medium-hardness steel alloy underbody armor add-on kit for the JLTV. This technology provides a relatively lightweight force protection capability to counter anti-vehicle mines and improvised explosive threats. If successful, this technology will transition to the JLTV Joint Program Office for follow-on procurement and fielding. ***FY 2024 Plans:*** Description: The Office of the Under Secretary of Defense for Research and Engineering (OUSD R&E), International Prototypes and Experiments (IP&E) Office, selects multiple low-cost projects in the areas of Force Application, Force Protection, Force Support, Logistics, Artificial Intelligence and Machine Learning, Robotics and Autonomous Systems, Interoperability, and Countering Unmanned Systems. These projects will be selected to deliver prototypes for evaluation, assessment, and Service adoption within 12 to 36 months. Soldier Borne Sensor System (Army): Operational evaluation expected to occur in 2Q FY 2024. Final test and closeout reports expected in 3Q FY 2024. If successful, this technology will transition to the Army's Program Executive Office Soldier for follow-on procurement and fielding through the Soldier Borne Sensor Program of Record. Long Run-Time Thermal Batteries for Long Range Munitions (Army): Optimized phase II test articles to be received in 1Q FY 2024. Phase II testing anticipated to occur in 1Q FY 2024. Final test and closeout reports expected to complete in 2Q FY 2024. If successful, this technology will be transitioned to domestic thermal reserve battery manufacturers for incorporation into munitions procured by the Joint Program Executive Office for Armaments and Ammunition. Spectrometric Gamma Camera (Army): Operational assessment expected to occur in 1-2Q FY 2024. Final test and closeout reports completed in 3Q FY 2024. If successful, this technology will transition to the Mounted Enhanced Radiac Long-Range Imaging Networkable vehicle mounted system by the Joint Program Executive Office for Chemical Biological Radiological Nuclear Defense.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Three-Dimensional Printed Metal Parts (Army): Phase II field demonstrations expected to occur in 2-3Q FY 2024. Final test and closeout reports expected in 4Q FY 2024. If successful, best performing materials will transition to various DoD programs for follow-on parts qualification testing and fielding to include the Army's Infantry Battalion Mortar System, the Air Force's M137A1 cannon for the AC-130 gunship, and the Marine Corps' Expeditionary Fabrication laboratory Program of Record. Artificial Intelligence for Off-Road Autonomy (Army): Phase I testing to occur in 1Q FY 2024. Phase II testing to occur in 2Q FY 2024. Phase III testing to occur in 3Q FY 2024. Initiate Phase IV testing in 4Q FY 2024. This project continues in FY 2025 with FY 2024 funding. If successful, this technology will transition to the Army's Next Generation Combat Vehicle Cross Functional Team for integration into the XM30 Mechanized Infantry Combat Vehicle and Robotic Combat Vehicle programs. Warfighter Water Purification (Army): Device validation expected to complete in 1Q FY 2024. Field demonstrations expected to complete in 3Q FY 2024. Final test and closeout reports expected in 4Q FY 2024. If successful, this technology will transition to the Army's Product Manager for Soldier Clothing and Individual Equipment for follow-on procurement and fielding through the Individual Water Treatment Device Program of Record. Air Launched small Unmanned Aerial System (sUAS) for Kinetic Engagement (Air Force/Space Force): Phase II Common Launch Tube integration and ejection testing planned for 1Q FY 2024. Phase III surrogate aircraft and live testing planned for 2-3Q FY 2024. Final test and closeout reports expected 4Q FY 2024. If successful, this technology will transition to Air Force Special Operations Command MQ-9 Reaper Medium Altitude Long Endurance-Tactical Unmanned Aerial Vehicle Program of Record through the Air Force Life Cycle Management Center. Low-Cost Supersonic Turbojet (Air Force/Space Force): Final test and closeout reports expected to complete in 1Q FY 2024. If successful, this technology will transition to on-going air launched unmanned aerial vehicle development programs. Minimizing Electromagnetic Emissions Switched Beam Antenna (Navy/USMC): Phase II environmental testing expected to complete in 1Q FY 2024. Phase II environmental testing expected to complete in 1Q FY 2024. Phase III operational demo anticipated for 3Q FY 2024. Final test and closeout reports expected in 4Q FY 2024. If successful, this technology will transition to the Navy's Amphibious Tactical Communication System as well as other applicable service communications programs of record for follow-on procurement and fielding. Green Pulsed Lasers for Optical Communications (Navy/USMC): Phase II testing expected to occur in 1Q FY 2024. Phase III testing expected to occur in 2-3Q FY 2024. Final test and closeout reports expected in 4Q FY 2024. If successful, this technology will transition to the Navy's Undersea Communications and Integration Program Office for insertion into future optical communications programs of record.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Limit of Detection of Rapid Response Fentanyl Strips (Army): Conduct field demonstration and experimentation in 1-2Q FY 2024. Final test and closeout report expected in 3Q FY 2024. If successful, this technology will transition to the Army's Dismounted Reconnaissance Sets, Kits, and Outfits modernization program for follow-on procurement and fielding. The technology will also be available for purchase by individual units for immediate use as needed.			
Vehicle Filtration Systems (Army): Receive phase II test articles in 1Q FY 2024. Initiate phase II environmental testing in 2Q FY 2024. This project continues in FY 2025 with FY 2024 funding. If successful, this technology will transition to the Army's XM30 Mechanized Infantry Combat Vehicle of Record for follow-on procurement and fielding. Additionally, this technology has applicability to several existing and future planned DoD vehicle programs.			
Foreign Object Damage Barrier (Navy/USMC): Testing expected to occur in 1-3Q FY 2024. Final test and closeout reports expected in 4Q FY 2024. If successful, this technology will transition to the Navy and Marine Corps Common Aviation Support Equipment program office for follow-on procurement and fielding at tactical land-based airfields.			
Naval Enhanced Global Positioning System (GPS) Antenna System (Navy/USMC): Field testing expected to occur in 2-3Q FY 2024. Final test and closeout reports expected to complete in 4Q FY 2024. If successful, this technology will transition to the Global Positioning System (GPS) Based Positioning Navigation and Timing Service Program of Record for follow-on procurement and fielding on various DoD vehicle platforms.			
Intelligent Unmanned Ground Vehicle (UGV) for Contested Environments (Navy/USMC): Conduct testing in 1-3Q FY 2024. Complete final test and closeout reports in 4Q FY 2024. If successful, the results of this effort will inform future UGV acquisition requirements including the Marine Corps' Expeditionary Modular Autonomous Vehicle and Army's Robotic Combat Vehicle-Light development programs.			
High Durability Armor Steel (Navy/USMC): Complete phase I and II testing in 1Q FY 2024. Conduct phase III operational testing in 2-3Q FY 2024. Final test and closeout reports are expected in 4Q FY 2024. If successful, the Army Research Laboratory will modify existing armor steel specifications and this technology will be adopted by vehicle manufacturers.			
Ration Heater (Army): Complete laboratory testing in 1Q FY 2024. Conduct operational testing in 2-3 Q FY 2024. Final test and closeout reports expected in 4Q FY 2024. If successful, this technology will transition to the Army's Combat Feeding Directorate for follow-on procurement and fielding through the Meal, Ready-to-Eat Improvement program.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Joint Light Tactical Vehicle (JLTV) Force Protection (Army): Limited efficacy and equipment compatibility testing expected to occur in 1Q FY 2024. Live fire testing expected to occur in 2Q FY 2024. Final test and closeout reports expected in 3Q FY 2024. If successful, this technology will transition to the JLTV Joint Program Office for follow-on procurement and fielding. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decreases to zero from FY 2024 to FY 2025 as major test events occur and several on-going projects complete in FY 2024. Successful projects will be transitioned via the Military Services project sponsors for procurement.			
Title: Foreign Comparative Testing Prototyping & Experimentation Focus Areas	0.848	12.202	27.612
Description: Previously funded effort. The FCT program will select new projects to evaluate allied/partner nation technologies that address emerging DoD capability gaps and provide substantial cost, schedule, and/or performance benefit to the warfighter. As projects are selected, they will be reported individually. Evaluation will be aligned to the National Defense Strategy (NDS) and the Office of the Under Secretary of Defense, Research and Engineering Critical Technology Areas, to deliver increased readiness and a more lethal Joint Force while strengthening alliances, attracting new partners, and achieving greater performance and affordability. ***FY 2024 Plans:*** The FCT Program anticipates selecting eight to fifteen new projects spread across the Office of the Under Secretary of Defense, Research and Engineering (OUSD R&E) Critical Technology Areas and Service readiness requirements in support of Joint Warfighting Concepts in FY 2024 and continued support to active FY 2022 and FY 2023 projects. Deliverables will include integrated products and software that enhances warfighting capabilities across multi-domain battlefield environments. This will be accomplished through the test and evaluation of prototypes in coordination with the Services and United States Special Operations Command and other DoD Agencies. ***FY 2025 Plans:*** The FCT Program anticipates supporting eight to fifteen ew projects spread across the Office of the Under Secretary of Defense, Research and Engineering (OUSD R&E) Critical Technology Areas and Service readiness requirements in support of Joint Warfighting Concepts in FY 2025. FCT will provide continued support to active FY 2023 and FY 2024 projects. Deliverables will include integrated products and software that enhance warfighting capabilities across multi-domain battlefield environments. This will be accomplished through test and evaluation of prototypes in coordination with the Services and United States Special Operations Command and other DoD Agencies. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
This increase in funding will be allocated for the selection of new projects that will commence in FY 2025. Projects will be selected through a merit-based process and will address current Office of the Under Secretary of Defense, Research and Engineering (OUSD R&E) Critical Technology Areas and Service readiness requirements.			
Title: International Collaboration and Experimentation (ICE) Focus Areas	0.000	-	2.395
Description: In FY 2025, the FCT program will expand with a campaign of cooperative + collaborative experimentation with allies and partners to evaluate applications of innovative foreign capabilities in response to changes in the global security environment. The focus and intent of these cooperative + collaborative efforts is to develop flexible deterrent options and increase resiliency in the defense ecosystem by working even more closely with our network of allies and partners around the globe. The ICE effort will evaluate allied/partner nation technologies that address emerging DoD capability gaps and provide substantial cost, schedule, and/or performance benefit to the warfighter. Cooperative + collaborative experimentation will be aligned to the National Defense Strategy (NDS) and the Office of the Under Secretary of Defense, Research and Engineering (OUSD R&E) Critical Technology Areas. Initial ICE engagement efforts will concentrate on the NDS and Combatant Command priority nations to deliver increased readiness and a more lethal Joint Force while strengthening alliances, attracting new partners, and achieving greater performance and affordability. ***FY 2025 Plans:*** The ICE anticipates supporting one to two new projects spread across the OUSD R&E Critical Technology Areas and Service readiness requirements in support of Joint Warfighting Concepts in FY 2025. Deliverables will include integrated products and software that enhance warfighting capabilities across multi-domain battlefield environments. This will be accomplished through test and evaluation of prototypes, demonstrations, and concept experimentation in coordination with the Services, United States Special Operations Command, Combatant Command and other DoD Agencies. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in FY 2025 supports additional Foreign Comparative Testing (FCT) projects and enhanced cooperative + collaborative experimentation with allies and partners to evaluate applications of innovative foreign capabilities in response to changes in the global security environment.			
Accomplishments/Planned Programs Subtotals	26.310	27.078	30.007

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603133D8Z / *Foreign Comparative Testing*	**Project (Number/Name)** 313 / *Foreign Comparative Testing*

D. Acquisition Strategy

Successful FCT/ICE projects support capability acquisition in several ways: technology upgrade insertion into a current platform or program providing greater capability or prolonging the life of the weapon system, informed/refined requirements for planned systems, or direct transition/procurement. FCT/ICE leverages the Services' and Defense Agencies' most efficient and effective acquisition approaches for rapid prototyping. This includes using Other Transaction Authorities and new or existing contract vehicles using the middle-tier acquisition strategy. The FCT Program supports the Service Executive Acquisition strategies and works with each Service, U.S. Special Operation Command, and Combatant Commands to enhance the speed of new technology infusion to maintain overmatch on tomorrow's battlefield.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603142D8Z / *Mission Engineering and Integration (ME&I)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	110.628	0.000	110.628	112.461	113.829	116.043	117.589	Continuing	Continuing
123: *Mission Engineering and Integration*	0.000	0.000	0.000	17.209	0.000	17.209	17.929	18.651	19.414	20.207	Continuing	Continuing
124: *Advanced Analysis and Capability Development*	0.000	0.000	0.000	93.419	0.000	93.419	94.532	95.178	96.629	97.382	Continuing	Continuing

Note

New Start (Y/N): No

In FY 2025, funding and activities are realigned from the Systems Engineering Program Element 0605142D8Z, Project Code 842.

A. Mission Description and Budget Item Justification

Mission Engineering and Integration executes complex analyses and studies that utilize advanced analytical methods and Modeling and Simulation tools to analyze, design, and integrate current and emerging operational needs and capabilities to achieve desired mission outcomes. These threat-informed studies develop digital models and Joint Mission Engineering Threads (METs) “Kill Webs” that are analyzed to evaluate performance of system-of-systems in executing end-to-end missions within operationally relevant scenarios. The quantitative, data-driven results identify solutions to close capability gaps, refine mission architectures, enhance development of future force capabilities and warfighting concepts, and inform leadership decisions to accelerate transition of innovative and game-changing capabilities to the warfighters.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	110.628	-	110.628
Total Adjustments	0.000	0.000	110.628	-	110.628
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Transfer	-	-	110.628	-	110.628

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603142D8Z *I Mission Engineering and Integration (ME&I)*

Change Summary Explanation

FY 2025 funding increase in the amount of $110.628 million is comprised of the following:

$12.780 million realigned from PE 0605142D8Z to increase the focus and delivery of robust modeling, simulation, and analysis products that quantitatively identify and assess candidate technologies and capabilities
$4.567 million is realigned from PE 0605294D8Z (Trusted & Assured Microelectronics) to supplement the above activities.
$94.900 million is realigned from PE 0604294D8Z to continue and extend the work done under the Assault Breaker II program
-$1.122 million reduction in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.
$5.000 million Classified increase
-$5.720 Internal realignment transfer funds to PE 0603379D8Z
$0.223 million increase for Economic Assumptions

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603142D8Z / *Mission Engineering and Integration (ME&I)*	Project (Number/Name) 123 / *Mission Engineering and Integration*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
123: *Mission Engineering and Integration*	0.000	0.000	0.000	17.209	0.000	17.209	17.929	18.651	19.414	20.207	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

In FY 2025, funding and activities are realigned from the Systems Engineering Program Element 0605142D8Z, Project Code 842, Mission Engineering, to increase the focus and delivery of robust modeling, simulation, and analysis products that quantitively identify and assess candidate technologies and capabilities that eliminate or disrupt adversary kill chains and deliver superior Blue Force kill chains. The analyses provide data-driven results and outputs that are part of the body of evidence to accelerate the transition of capabilities to our warfighters. Mission Engineering explores trade-space opportunities for capability development, informs selection of prototypes, and through well-developed threads and metrics supports the design of joint experimentation. FY 2025 funding is a continuation of FY 2024 efforts. Additional funding is realigned from the Trusted & Assured Microelectronics Program Element 0605294D8Z, to supplement those activities.

A. Mission Description and Budget Item Justification

Mission Engineering and Integration activities include the following functions:

• Carry out responsibilities described in the National Defense Authorization Act for FY 2017, Section 855, (Mission Integration Management) supporting the National Defense Strategy by identifying critical warfighting capabilities to achieve a more lethal Joint Force and aid in the implementation of new innovative joint warfighting concepts.

• Apply analytical rigor to operational and technical analysis of current and future missions; enabling DoD leaders to make informed investment decisions on required technologies and capabilities that can be transitioned and fielded to warfighters to enhance kill chain effectiveness in response to adversarial threats.

• Execute a variety of Mission Engineering studies in support of the National Defense Strategy, aligned with Defense Planning Scenarios, that evaluate mission impacts of integrating new technologies and capabilities into critical warfighter missions. The quantitative results directly support and enhance decisions on requirements, resourcing, prototype selection, design of joint experimentation, and transition of military capability to the field.

• In coordination with Joint Staff, Combatant Commanders, and Office of the Secretary of Defense agencies, develop digital and reusable Joint Mission Engineering Threads (METs)/ “Kill Webs” that are used to assess and evaluate system-of-systems dependencies and risks in executing end-to-end missions within an operational scenario.

• Through robust analytics, quantify capability gaps across missions, inform the identification of new concepts based on a better understanding of their mission impacts (effectiveness), inform the design of joint experimentation through development of kill webs and vital metrics for data collection, and execute sensitivity analysis around selected concepts to inform resourcing decisions for transition activities.

• Continue to maintain the Mission Engineering Guide and lead the Mission Engineering Practitioners Forum to share lessons learned and pain points and advance the state of practice of Mission Engineering.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603142D8Z / *Mission Engineering and Integration (ME&I)*	**Project (Number/Name)** 123 / *Mission Engineering and Integration*

• Increase collaboration with industry, utilizing technical information exchange agreements to share sensitive data and models. These efforts will identify material solutions that address operational gaps and mission requirements; building public-private partnerships that inform technology, modernization, research, and applied engineering investments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Mission Engineering and Integration	-	0.000	17.209

Description: Conduct Mission Engineering studies to analyze recommended technologies that eliminate or disrupt adversary kill chains or deliver superior Blue Force kill chains. Leverage modeling and simulation to identify and evaluate current and emerging systems, systems of systems, technologies, capabilities, and warfighting concepts.

Prior Accomplishments:
- Decomposed missions to develop digital representations of Mission Engineering Threads (Critical Kill Webs) focused on missions within the USINDOPACOM Area of Responsibility (AOR) to inform data collection and design of joint experimentation.
- Completed a variety of Mission Engineering studies focused on hypersonics, directed energy, electromagnetic spectrum operations, and nuclear command, control, and communications that have informed leadership investment decisions throughout capability portfolio management, program budget reviews, and joint concept development.
- Executed complex and robust Mission Engineering analyses that identified warfighter capability gaps and assessed mission impacts of innovative technology and capabilities in countering our adversarial threats. Delivered results that supported DoD leadership funding and transition decisions.
- Established Information Exchange Agreements (IEAs) and hosted a classified Mission Engineering Forum with industry partners that promoted and enabled sharing of information to address warfighter “mission” hard problems and inform R&D decisions.
- Advanced the state of practice of Mission Engineering through the Mission Engineering Practitioners Forum comprised of key DoD organizations by promoting awareness and sharing best practices for implementation of the ME methodology, development of mission architectures, training and competency, and executing of ME analytics. Continue to mature and release updated version of the Mission Engineering Guide which serves a vital document for practitioners across the DoD.
- Commenced focused Mission Engineering activities to identify critical mission Assured/Alternate Position, Navigation and Timing (APNT) capabilities that can be accelerated to our warfighters to support emerging and future missions. Initiated modeling and simulation on Base Defense mission to identify enhanced capabilities to improve architecture.

FY 2024 Plans:
- Execute a variety of mission engineering studies in support of the National Defense Strategy to inform requirements, prototypes, design of experiments, and transition of concepts.
- Develop and analyze Joint Mission Engineering Threads (METs) within priority operational scenarios to identify and quantify capability gaps and explore the mission impacts associated to changes to systems and/or mission activities.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603142D8Z / *Mission Engineering and Integration (ME&I)*	**Project (Number/Name)** 123 / *Mission Engineering and Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Leverage the tools and infrastructure developed by ACD to support Mission Engineering activities, such as collection and warehousing of data, and M&S computational environment. - Increase collaboration with the analytical community to increase transparency and robustness in the products delivered to support leadership decisions; and advance the state of practice of Mission Engineering. - Exchange data and models with industry partners to aid in the identification of solutions that address operational gaps and mission requirements; and build public-private partnerships. ***FY 2025 Plans:*** - Increase Mission Engineering analyses and studies that explore a variety of scenarios across different geographical regions and domains to identify technologies and capabilities that close capability gaps, and inform requirements, prototypes, design of experiments, and transition of concepts. Focus areas include Joint Fires, Joint Command and Control, Nuclear Command, Control and Communications, Contested Logistics, and Base Defense. - Continue to develop digital and reusable Joint Mission Engineering Threads (METs)/ “Kill Webs” to analyze system-of-systems within an operational scenario and produce results that inform capability and technology design and integration considerations. - Continue to engage with the Analytic Community to advance the state of practice of Mission Engineering; and foster relationships across the community to share data and results that inform leadership decisions on identification, resourcing, and transitioning of technologies and capabilities that close capability gaps. - Continue to increase collaboration with industry partners to share information on relevant scenarios and missions for analytical purposes that lead to the identification and evaluation of R&D initiatives that address operational gaps. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, funding and activities are realigned from the Systems Engineering Program Element 0605142D8Z, Project Code 842, Mission Engineering, to increase the focus and delivery of robust modeling, simulation, and analysis products that quantitively identify and assess candidate technologies and capabilities that eliminate or disrupt adversary kill chains and deliver superior Blue Force kill chains. The analyses provide data-driven results and outputs that are part of the body of evidence to accelerate the transition of capabilities to our warfighters. Mission Engineering explores trade-space opportunities for capability development, informs selection of prototypes, and through well-developed threads and metrics supports the design of joint experimentation. FY 2025 funding is a continuation of FY 2024 efforts. Additional funding is realigned from the Trusted & Assured Microelectronics Program Element 0605294D8Z, to supplement those activities.			
Accomplishments/Planned Programs Subtotals	-	0.000	17.209

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603142D8Z / *Mission Engineering and Integration (ME&I)*	**Project (Number/Name)** 123 / *Mission Engineering and Integration*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603142D8Z / *Mission Engineering and Integration (ME&I)*	Project (Number/Name) 124 / *Advanced Analysis and Capability Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
124: *Advanced Analysis and Capability Development*	0.000	0.000	0.000	93.419	0.000	93.419	94.532	95.178	96.629	97.382	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

In FY 2025, a new project is established for Advanced Analysis and Capability Development (A2CD) that will continue and extend the work done under the Assault Breaker II program to support efforts to integrate data, tools, and techniques to accelerate delivery of capabilities to the warfighter, which is Building on our Enduring Advantages, a key goal of the NDS. Funding is realigned from the Trusted & Assured Microelectronics Program Element 0604294D8Z, to fund new activities that realign key elements of the Assault Breaker II program to create a continuous innovation environment that will accelerate the fielding of needed Joint combat capability to the warfighter.

A. Mission Description and Budget Item Justification

Advanced Analysis and Capability Development (A2CD): Creates a continuous innovation environment and continues and extends the work started under the Assault Breaker II program that accelerates the development, incubation, and evaluation processes that transition joint capabilities. Work focuses on three areas.

1. Advanced Concept Development: Studies and analysis effort that will architect near, mid, and far term all security level, all domain, and all Service warfighting architectures to solve relevant military problems. Additional classified information available upon request.
2. Advanced Modeling and Simulation (M&S) Technology and Tool Development: Development effort that will create advanced modeling and simulation (M&S) tools and analytic processes that enable the Advanced Concept Development studies and analysis effort and other analytic efforts across Department of Defense (DoD), Federally Funded Research and Development Centers (FFRDCs), University-Affiliated Research Centers (UARCs), Industry experts, and partner nations.
3. Modeling and Simulation Big Play: Technology and process implementation effort that will enable experimentation with new M&S tools and processes to enable new analytic processes and to inform the development of new tools to support the Advanced Concept Development work, as well as the sharing and building developmental models and analytic results with Industry, FFRDC/UARCs, and partner nations.

These activities will accomplish the following:

• Extend work done under the Assault Breaker II program to use all security level, all domain, and all Service advanced analytic processes to inform rapid prototyping activities and capability investment decisions. Additional classified information available upon request.
• Sustain and operate the necessary infrastructure, hardware, and software processes to ensure the continued development of advanced M&S tools to support evolving defense challenges.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603142D8Z / *Mission Engineering and Integration (ME&I)*	**Project (Number/Name)** 124 / *Advanced Analysis and Capability Development*

• Develop and sustain a knowledge repository that enables all security level cooperative analysis and the sharing of data at all security levels to dramatically improve analysis efficiency throughout the Department.
• Develop new analytic processes through experimentation that leverage new M&S tools, provide user support for those new tools and processes, and integrate user feedback to inform the continued development of advanced M&S tools.
• Provide an enduring analytic support capability that can be used by the DoD, FFRDC/UARCs, industry, and partner nations at all classification levels, from UNCLASSIFIED to Top Secret, Sensitive Compartmented Information, Special Access Program (TS/SCI/SAP).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Advanced Concept Development	-	-	23.000

Description: Realigns key elements of the Assault Breaker II program to enable the continued all security level, all domain advanced Joint concept development effort centered on kill web analysis to:
• Produce strategically informed technical analysis that supports the development of future warfighting concepts and identify opportunities for investment in key enabling technologies.
• Inform rapid prototyping and experimentation efforts and the production of capability development recommendations oriented toward increasing warfighter effectiveness.

FY 2025 Plans:
Advanced Concept Development activities support the following.

Analytic Team: Team of government, Federally Funded Research and Development Centers (FFRDCs) / University-Affiliated Research Centers (UARCs), industry, and Systems Engineering and Technical Assistance (SETA) personnel will perform analysis that informs near, mid, and far term Joint warfighting concepts that inform capability development recommendations which guide investment strategies. The team is focused on a distinct, relevant military problem and it reports directly to the Joint Requirements Oversight Council (JROC). Additional classified information available upon request.

Eloquent Omen: A strategically informed campaign of analysis that explores the combined use of Joint non-kinetic effects in the period prior to the initiation of armed conflict that is intended to preserve decision space and allow for de-escalation. It will conduct several studies and wargames on an annual basis to inform capability development, process changes, and force structure changes. Additional classified information available upon request.

Track House: Data-experimentation team that uses advanced data science methods to develop and evaluate unique data feeds through experimentation at all classification levels to support the creation of a militarily relevant persistent targeting common operational picture to meet Combatant Command needs. Additional classified information available upon request.

FY 2024 to FY 2025 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603142D8Z / *Mission Engineering and Integration (ME&I)*	**Project (Number/Name)** 124 / *Advanced Analysis and Capability Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2025, Advanced Analysis and Capability Development (A2CD) will continue and extend the work done under the Assault Breaker II program to support efforts to integrate data, tools, and techniques to accelerate delivery of capabilities to the warfighter, which is Building on our Enduring Advantages, a key goal of the NDS. Funding is realigned from the Trusted & Assured Microelectronics Program Element 0604294D8Z, to fund new activities that realign key elements of the Assault Breaker II program to create a continuous innovation environment that will accelerate the fielding of needed Joint combat capability to the warfighter.			
Title: Advanced Modeling and Simulation (M&S) Technology and Tool Development	-	-	54.549
Description: Enhances the Top Secret, Sensitive Compartmented Information, Special Access Program (TS/SCI/SAP) Modeling and Simulation (M&S) software and hardware development environment established by the Secure Advanced Framework for Simulation and Modeling (SAFE-SiM) program. Focus areas includes the Continuous Integration / Continuous Delivery (CI/CD) software pipeline infrastructure and Multi-Level Security (MLS). This work matures the Secure Advanced Framework for Simulation and Modeling (SAFE-SiM) modeling and simulation (M&S) program and suite of analytic tools to continually deliver new capabilities, based on user feedback, and transition new modeling and simulation (M&S) tools for defense analysis. ***FY 2025 Plans:*** Advanced Modeling and Simulation (M&S) Technology and Tool Development supports the following. Modeling and Simulation Integration Environment (MSIE): This hardware, software, and personnel infrastructure enables the TS/SCI/SAP Development Security Operations (DevSecOps) environment for creating advanced M&S tools. It includes Sensitive Compartmented Information Facililties (SCIF) / Special Access Program Facilities (SAPF), a TS/SCI/SAP compute hardware environment, and a team of software developers as well as necessary security personnel. Secure Advanced Framework for Simulation and Modeling (SAFE-SiM): This provides Continuous Integration / Continuous Delivery (CI/CD) support for fielding the SAFE-SiM program, which is the core of the program's M&S tool set, and accomplishes three objectives: 1) Meets the need for an integrated architecture that enables all security level, faster-than-real time, theater-wide, multi-domain, seafloor to space mission level analysis to enable the exploration of adaptive Joint warfighting architectures; 2) Supports the rapid conduct of concept development, acquisition trade space exploration, and force structure evaluation in a TS/SCI/SAP environment; 3) Delivers advanced analytic and visualization tools that will support senior-level decision makers, technology developers, and acquisition professionals. The SAFE-SiM tools will transition to the defense analytic community. Multi-Level Security (MLS): This provides hardware and software solutions that enable the appropriate data protection and access from the UNCLASSIFIED to Top Secret, Sensitive Compartmented Information, Special Access Program (TS/SCI/SAP)			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603142D8Z / *Mission Engineering and Integration (ME&I)*	**Project (Number/Name)** 124 / *Advanced Analysis and Capability Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
levels. This capability is both necessary and integral for SAFE-SiM as well as the Modeling and Simulation Big Play for Defense Research and Engineering (R&E). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, Advanced Analysis and Capability Development (A2CD) will continue and extend the work done under the Assault Breaker II program to support efforts to integrate data, tools, and techniques to accelerate delivery of capabilities to the warfighter, which is Building on our Enduring Advantages, a key goal of the NDS. Funding is realigned from the Trusted & Assured Microelectronics Program Element 0604294D8Z, to fund new activities that align key elements of the Assault Breaker II program to create a continuous innovation environment that will accelerate the fielding of needed Joint combat capability to the warfighter.			
Title: Modeling and Simulation Big Play ***Description:*** Delivers and sustains a Multi-Level Security (MLS) enabled, modeling and simulation (M&S) ecosystem to support both local and distributed collaborative analysis via networks that can be accessed by U.S. government, Department of Defense, Academic, and Industry stakeholders; results of this work include: • Top Secret, Sensitive Compartmented Information, Special Access Program (TS/SCI/SAP), MLS-enabled compute infrastructure that can run multiple M&S tools • Model repository/knowledge management capability that realizes the USD (R&E) vision to enable the sharing of models with Industry and allies/partner nations and to support analysis across the defense enterprise as well as provide secure, curated access to completed analysis • Integrated model development environment that enables the creation of models at all levels of classification from UNCLASSIFIED to Top Secret, Sensitive Compartmented Information, Special Access Program (TS/SCI/SAP) levels to support the Advanced Concept Development effort as well as industry, Federally Funded Research and Development Centers (FFRDCs), University-Affiliated Research Centers (UARCs), and partner nations and allies. • Team dedicated to the development of new analytic processes and methods based on the creation of new analytical tools that can transition to users across the defense analytic enterprise. ***FY 2025 Plans:*** Modeling and Simulation Big Play project activities support the following. Model Repository: This provides an MLS-enabled Top Secret, Sensitive Compartmented Information, Special Access Program (TS/SCI/SAP) hardware and software environment that maintains an accessible repository of information and data to support the Advanced Concept Development effort's advanced kill web analysis and simulation, with four primary results: 1) Foundational data regarding characteristics, behaviors, and logic flow to support complex warfighting analysis along with executable models for specific modeling and simulation (M&S) environments; 2) Classified models and data derived and produced by government and academic entities, classified and proprietary models and data produced by industry, and models and data derived and produced	-	-	15.870

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603142D8Z / *Mission Engineering and Integration (ME&I)*	**Project (Number/Name)** 124 / *Advanced Analysis and Capability Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
by partner nations for the purpose of capability development; 3) Integrated model development environment where users can create new models with the potential to expand to support model creation in other M&S environments; 4) Team dedicated to the curation of the data within the model repository to ensure that it remains appropriate and relevant for defense analysis as threat and friendly military capabilities evolve in the face of changing strategic conditions. Technical Processes: This supports a team of subject matter experts to test, evaluate, and prototype new analytical tools and experiment with new M&S capabilities as well as models and algorithms to assess how they can improve the quality of the analysis done in the environment of tools and processes for the analytic community and transition partners, such as allied nations and multi-lateral organizations. Classified network: This identifies Multi-Level Security (MLS) enabled, Top Secret, Sensitive Compartmented Information, Special Access Program (TS/SCI/SAP) network requirements for government, industry, academia, and multinational partners to access and use the advanced modeling and simulation (M&S) tools and analytic processes developed Advanced M&S Tool and Technology effort as well as the Model Repository to generate both new and pre-existing data, models, and behavior-based scenarios to support analytic efforts. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, Advanced Analysis and Capability Development (A2CD) will continue and extend the work done under the Assault Breaker II program to support efforts to integrate data, tools, and techniques to accelerate delivery of capabilities to the warfighter, which is Building on our Enduring Advantages, a key goal of the NDS. Funding is realigned from the Trusted & Assured Microelectronics Program Element 0604294D8Z, to fund new activities that align key elements of the Assault Breaker II program to create a continuous innovation environment that will accelerate the fielding of needed Joint combat capability to the warfighter.			
Accomplishments/Planned Programs Subtotals	-	-	93.419

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603183D8Z / *Joint Hypersonic Technology Development & Transition*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	65.706	52.292	51.941	-	51.941	52.004	55.047	55.102	56.205	Continuing	Continuing
066: *Joint Hypersonic Transition Office (JHTO)*	-	65.706	52.292	51.941	-	51.941	52.004	55.047	55.102	56.205	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

The Joint Hypersonics Transition Office (JHTO), within the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)), was created to establish a university consortium for hypersonics research; support workforce development; expedite testing, evaluation, and acquisition of hypersonic technologies to meet the stated needs of the warfighter, including flight testing, ground-based-testing, and underwater launch testing; ensure that prototyping demonstration programs on hypersonic systems integrate advanced technologies to speed the maturation and deployment of future hypersonic systems; develop strategies and roadmaps for hypersonic technologies to enable the transition of such technologies to future operational capabilities for the warfighter; and, develop and implement a strategy for enhancing the current and future hypersonics workforce.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	60.156	52.292	52.360	0.000	52.360
Current President's Budget	65.706	52.292	51.941	0.000	51.941
Total Adjustments	5.550	0.000	-0.419	0.000	-0.419
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	7.049	-			
• SBIR/STTR Transfer	-1.493	-			
• Program Adjustments	-0.006	-	-0.524	-	-0.524
• Economic Assumptions	-	-	0.105	-	0.105

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 066: *Joint Hypersonic Transition Office (JHTO)*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603183D8Z *I Joint Hypersonic Technology Development & Transition*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Program Increase*	3.000	-
Congressional Add: *University Research*	5.000	-
Congressional Add Subtotals for Project: 066	8.000	-
Congressional Add Totals for all Projects	8.000	-

Change Summary Explanation

A reduction of $ 0.524 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.105 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603183D8Z / *Joint Hypersonic Technology Development & Transition*	Project (Number/Name) 066 / *Joint Hypersonic Transition Office (JHTO)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
066: *Joint Hypersonic Transition Office (JHTO)*	-	65.706	52.292	51.941	-	51.941	52.004	55.047	55.102	56.205	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem

The Joint Hypersonics Transition Office (JHTO), within the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)), was created to establish a university consortium for hypersonics research and support workforce development; expedite testing, evaluation, and acquisition of hypersonic technologies to meet the stated needs of the warfighter, including flight testing, ground-based-testing, and underwater launch testing; ensure that prototyping demonstration programs on hypersonic systems integrate advanced technologies to speed the maturation and deployment of future hypersonic systems; develop strategies and roadmaps for hypersonic technologies to enable the transition of such technologies to future operational capabilities for the warfighter; and develop and implement a strategy for enhancing the current and future hypersonics workforce.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: University Consortium for Applied Hypersonics (UCAH)	28.333	27.823	27.107
Description: The Joint Hypersonics Transition Office (JHTO) established the University Consortium for Applied Hypersonics and plans to solicit research projects through the Consortium that address priorities and gaps identified by the JHTO Hypersonics Science and Technology (S&T) Roadmap, focusing on workforce development, applied research and advanced technology development related to the hypersonics mission. To facilitate development of the next generation hypersonics workforce, the JHTO intends to leverage the Consortium to award scholarships to graduate students who are focusing on key hypersonic development areas. Additionally, the Consortium will host Consortium Industry Days, Project Industry Days, and participate in career/internship fairs to cross-level information and enhance workforce development.			
FY 2024 Plans: FY 2024 base plans for the UCAH are a continuation of the path identified for FY 2023, to include continued execution of research projects through the Consortium with the planned expansion of scope of the projects to further address priorities and gaps identified by the JHTO Hypersonics Science and Technology (S&T) Roadmap.			
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603183D8Z / *Joint Hypersonic Technology Development & Transition*	**Project (Number/Name)** 066 / *Joint Hypersonic Transition Office (JHTO)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 base plans for the UCAH are a continuation of the path identified in the S&T roadmap for FY 2024. UCAH will continue to execute research projects through the Consortium; in addition, the scope of the projects will be increased to focus more on workforce development and applied research as identified by the S&T roadmap. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $0.556 million between FY 2024 and FY 2025 supports the planned scope of projects within the Consortium. A decrease of $ 0.210 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.050 million in FY 2025 for Economic Assumptions.			
Title: Navigation, Guidance and Controls (NGC) Science and Technology (S&T) Development ***Description:*** In alignment with the jointly-developed Hypersonics Science and Technology (S&T) Roadmap, the Joint Hypersonics Transition Office (JHTO) funds NGC S&T projects to improve the operational capabilities of both offensive and defensive hypersonic systems. These projects focus on navigation in contested environments, on-vehicle trajectory generation, communications risk reduction, guidance electronics, and conformal antenna development. Additional details regarding these projects are sensitive and/or classified and can be be provided upon request. ***FY 2024 Plans:*** Continue activities from FY 2023. Additional details regarding FY 2024 NGC projects are sensitive and/or classified. ***FY 2025 Plans:*** Continue activities from FY 2024. Additional details regarding FY 2025 NGC projects are sensitive and/or classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.010 million between FY 2024 and FY 2025 reflects minor budget fluctuations. Funding increase of $0.055 million in FY 2025 for Economic Assumptions.	10.367	4.721	4.786
Title: Propulsion Science and Technology (S&T) Development ***Description:*** In alignment with the jointly-developed Hypersonics S&T Roadmap, the Joint Hypersonics Transition Office (JHTO) funds propulsion S&T projects designed to enhance propulsion capabilities for both offensive and defensive hypersonic systems. These efforts will close critical gaps in the development of hypersonic cruise missiles and enhance range and/or payload capacity of boost-glide systems. Focus areas for these projects include solid rocket motor component technologies, expanding the operating envelope of Dual-Mode Ramjet/Scramjet propulsion systems, developing new actuator technologies for axial thrusters, and establishing a proof-of-principle for an improved endothermic fuel for hypersonic applications. Additional details regarding these projects are sensitive and/or classified and can be provided upon request. ***FY 2024 Plans:***	3.317	3.004	3.104

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603183D8Z / *Joint Hypersonic Technology Development & Transition*	**Project (Number/Name)** 066 / *Joint Hypersonic Transition Office (JHTO)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue activities from FY 2023. Additional details regarding FY 2024 propulsion projects are sensitive and/or classified. ***FY 2025 Plans:*** Continue activities from FY 2024. Additional details regarding FY 2025 propulsion projects are sensitive and/or classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.100 million between FY 2024 and FY 2025 reflects minor budget fluctuations.			
Title: Systems Engineering, Design and Analysis (SEDA) Science and Technology (S&T) Development ***Description:*** In alignment with the Hypersonics S&T Roadmap continue to improve the modeling and prediction of hypersonic vehicle plumes, wakes, and signatures in addition to providing performance baselines for offensive and defensive systems. Additional details regarding SEDA projects are sensitive and/or classified. ***FY 2024 Plans:*** Continue activities from FY 2023. Additional details regarding FY 2024 SEDA projects are sensitive and/or classified. ***FY 2025 Plans:*** Continue activities from FY 2024. Additional details regarding FY 2025 SEDA projects are sensitive and/or classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.036 million between FY 2024 and FY 2025 reflects minor budget fluctuations.	1.817	1.796	1.832
Title: Materials, Structures and Manufacturing (MSM) Science and Technology (S&T) Development ***Description:*** In alignment with the jointly-developed Hypersonics S&T Roadmap, the Joint Hypersonic Transition Office (JHTO) funds MSM S&T projects essential to develop new high-temperature materials for hypersonic applications and to design more efficient and effective manufacturing methods for hypersonic structural components. Specific projects seek to characterize alternative ceramic matrix composites for hypersonics, improve the ability to produce multi-phase monolithic ceramic dielectric materials, test and characterize the performance of leading edge coatings, and improve manufacturing processes to build cruiser fins. Additional details regarding these projects are sensitive and/or classified and can be provided upon request. ***FY 2024 Plans:*** Continue activities from FY 2023. Additional details regarding FY 2024 MSM projects are sensitive and/or classified. ***FY 2025 Plans:*** Continue activities from FY 2024. Additional details regarding FY 2025 MSM projects are sensitive and/or classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	1.817	1.546	1.577

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603183D8Z / *Joint Hypersonic Technology Development & Transition*	**Project (Number/Name)** 066 / *Joint Hypersonic Transition Office (JHTO)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The increase of $0.031 million between FY 2024 and FY 2025 represents minor budget fluctuations.			
Title: Ordnance Science and Technology (S&T) Development ***Description:*** In alignment with the jointly-developed Hypersonics S&T Roadmap, the Joint Hypersonics Transition Office (JHTO) funds ordnance S&T projects to better understand hypersonic ordnance effects and improve those effects across a broad range of target sets. Projects will develop and demonstrate a survivable fuze system designed to function under extreme hypersonic terminal conditions, model shock loads associated with a multi-mission warhead, and conduct high-fidelity modeling to analyze and optimize the effects of hypersonic munitions. Additional details regarding these projects are sensitive and/or classified. ***FY 2024 Plans:*** Continue activities from FY 2023. Additional details regarding FY 2024 Ordinance projects are sensitive and/or classified. ***FY 2025 Plans:*** Continue activities from FY 2024. Additional details regarding FY 2025 Ordinance projects are sensitive and/or classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.095 million between FY 2024 and FY 2025 represents minor budget fluctuations. A decrease of $ 0.020 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.	4.353	4.760	4.645
Title: Aerodynamics and Aerothermodynamics Science and Technology (S&T) Development ***Description:*** In alignment with the jointly-developed Hypersonics S&T Roadmap, the Joint Hypersonics Transition Office (JHTO) funds aerodynamics and aerothermal S&T projects to enhance aero optics modeling and simulation testing. This project seeks to increase the fidelity of infrared aero optics modeling and simulation data while driving down man-hours through creation/validation of a more useful and collaborative collection format. Additional details are sensitive and/or classified. ***FY 2024 Plans:*** Continue activities from FY 2023. Additional details regarding FY 2024 aerodynamics and aerothermal projects are sensitive and/or classified. ***FY 2025 Plans:*** Continue activities from FY 2024. Additional details regarding FY 2025 aerodynamics and aerothermal projects are sensitive and/or classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	3.017	3.957	4.036

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603183D8Z / *Joint Hypersonic Technology Development & Transition*	**Project (Number/Name)** 066 / *Joint Hypersonic Transition Office (JHTO)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The increase of $0.079 million between FY 2024 and FY 2025 reflects minor fluctuations.			
Title: Joint Hypersonics Transition Office (JHTO) Systems Engineering Field Activity at Naval Surface Warfare Center Crane Division (NSWC Crane) ***Description:*** Supports systems engineering and integration for hypersonics development to generate efficiencies and facilitate technology transition. Support will include coordinating with systems engineering teams across the Services and programs; negotiating more modular Government Reference Architectures to support individual programs; define and execute system on-ramping plans, and guide accelerated development plans. Additionally, the activity will represent the Joint Hypersonics Transition Office (JHTO) as a technical execution area co-lead for workforce development. ***FY 2024 Plans:*** Continue cross-service systems engineering, technology transition, and workforce development initiatives. ***FY 2025 Plans:*** Continue cross-service systems engineering, technology transition, and workforce development initiatives. Continue to develop and transition advanced technologies to services and agencies; Performers in services/agencies, FFRDCs, and industry. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.273 million between FY 2024 and FY 2025 reflects an increase in support of cross-service systems engineering, technology transition, finance and workforce development areas. A decrease of $ 0.104 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.	4.685	4.685	4.854
Accomplishments/Planned Programs Subtotals	57.706	52.292	51.941

	FY 2023	FY 2024
Congressional Add: Program Increase ***FY 2023 Accomplishments:*** Gather multi-fidelity data and data analysis for future demonstration projects, validate, and refine surrogate applications.	3.000	-
Congressional Add: University Research ***FY 2023 Accomplishments:*** Use existing digital tools to design, validate, and test existing surrogate applications with a reduction in time to design, provide a case study for the application for model-	5.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603183D8Z / *Joint Hypersonic Technology Development & Transition*	**Project (Number/Name)** 066 / *Joint Hypersonic Transition Office (JHTO)*

	FY 2023	FY 2024
based engineering, and reduce the time to modeling and simulation at all levels of fidelity.		
Congressional Adds Subtotals	8.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603225D8Z *I Joint DoD-DoE Munitions Technology Development*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	18.291	19.567	19.826	-	19.826	20.265	20.687	21.121	21.543	Continuing	Continuing
225: *Joint DOD DOE Munitions*	-	18.291	19.567	19.826	-	19.826	20.265	20.687	21.121	21.543	Continuing	Continuing

Note

New Start (Y/N): N

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression, Prevail in Conflict, Defend the Homeland, and Build Sustainable and Long-Term Advantages.

The mission of the Joint DoD/DOE Munitions Technology Development Program (JMP) is to develop new and innovative science and technology (S&T) to enable significant advancements in the state-of-the-art for conventional munitions. The JMP portfolio comprises essential, cross-cutting, and foundational S&T investments that enable future force operational capabilities in the near, mid, and far term.

A memorandum of understanding between the Department of Defense and the Department of Energy provides the basis for the cooperative effort and for cost sharing the mutually beneficial technology advancements. The funding budgeted by the DoD to this program are matched, at a minimum, dollar for dollar by the DOE. Through this interdepartmental cooperation, the DoD leverages DOE's substantial investments in intellectual capital, highly specialized skills, advanced scientific equipment and facilities, and computational tools not available within the DoD. The integration of DOE technologies with DoD Joint Services' needs has provided major advances in munition capabilities over many years and continues to play a crucial role in the exploration, development, and transition of new technologies needed by the services.

The JMP has established a successful collaborative community of DoD and DOE scientists and engineers that develop technologies of interest to both Departments. A structured cadence of threat informed requirements development, Joint Service informed portfolio development, and bi-annual technical reviews ensure that the JMP's investments address high-priority DoD gaps, needs, and challenges. The JMP portfolio is organized into four Technology Coordination Groups (TCG), led by DoD Service laboratory subject matter experts, which evaluate each project's technical progress and continued relevance to the mission.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603225D8Z *I Joint DoD-DoE Munitions Technology Development*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	17.279	19.567	19.985	-	19.985
Current President's Budget	18.291	19.567	19.826	-	19.826
Total Adjustments	1.012	0.000	-0.159	-	-0.159
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.619	-			
• SBIR/STTR Transfer	-0.605	-			
• Program Adjustments	-0.002	-	-0.200	-	-0.200
• Economic Adjustments	-	-	0.041	-	0.041

Change Summary Explanation

A reduction of $0.200 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.041 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603225D8Z / *Joint DoD-DoE Munitions Technology Development*	Project (Number/Name) 225 / *Joint DOD DOE Munitions*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
225: *Joint DOD DOE Munitions*	-	18.291	19.567	19.826	-	19.826	20.265	20.687	21.121	21.543	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the Joint DoD/DOE Munitions Technology Development Program (JMP) is to develop new and innovative science and technology (S&T) to enable significant advancements in the state-of-the-art for conventional munitions. The JMP portfolio comprises essential, cross-cutting, and foundational S&T investments that enable future force operational capabilities in the near, mid, and far term.

A memorandum of understanding between the Department of Defense and Department Of Energy provides the basis for the cooperative effort and for cost sharing the mutually beneficial technology advancements. The funding budgeted by the DoD to this program are matched, at a minimum, dollar for dollar by the DOE. Through this interdepartmental cooperation, the DoD leverages DOE's substantial investments in intellectual capital, highly specialized skills, advanced scientific equipment and facilities, and computational tools not available within the DoD. The integration of DOE technologies with DoD Joint Services' needs has provided major advances in munition capabilities over many years and continues to play a crucial role in the exploration, development, and transition of new technologies needed by the services.

The JMP has established a successful collaborative community of DoD and DOE scientists and engineers that develop technologies of interest to both Departments. A structured cadence of threat informed requirements development, Joint Service informed portfolio development, and bi-annual technical reviews ensure that the JMP's investments address high-priority DoD gaps, needs, and challenges. The JMP portfolio is organized into four Technology Coordination Groups (TCG), led by DoD Service laboratory subject matter experts, which evaluate each project's technical progress and continued relevance to the mission.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Joint DoD/DOE Munitions Technology Development	18.291	19.567	19.826
Description: Joint DoD/DOE Munitions Technology Development focuses on the following key areas: - Decision tools, diagnostics, and datasets for munition design and evaluation - Munition delivery technology enabling advanced weapon bodies, propulsion systems, and extreme environment survivability - Munition controls for fuzing, microelectronics, power, sensors, kill chains, and survivable components - Lethal effects innovations enabling novel explosive materials, formulations, warhead designs, and target damage advancements			
FY 2024 Plans: • Develop weaponeering and decision tools for assessment of target interaction effects to enhance lethality modeling codes. • Develop novel imaging methods and models of high explosive fracture behavior to enable lighter munitions and increased range and speed.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603225D8Z / *Joint DoD-DoE Munitions Technology Development*	**Project (Number/Name)** 225 / *Joint DOD DOE Munitions*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Develop reactive flow models to enable warhead geometries necessary for miniature swarming munitions and extreme environment applications. • Demonstrate a numerical integration methodology for hydrocodes to reduce the computational cost and schedule of munition simulations by >20X for designers and weaponeers. ***FY 2025 Plans:*** • Develop high fidelity simulations of combined effects explosive (CEX) warheads using recently validated main charge reactive burn models. • Develop macroscale reduced-order failure model for metals with documentation for transition to DoD. • Develop and evaluate prototype low temperature-compatible supercapacitor technology with 10x energy density over the state-of-the-art. • Demonstrate a new modeling and simulation capability for ship defeat in support of maritime lethality efforts. • Demonstrate capability to measure surface chemistry of thermal protection system (TPS) materials in hot, hypersonic flow representative of the aerodynamic shear and extreme heating rates found in hypersonic flight. • Demonstrate a suit of machine learning algorithms for a counter-unmanned aircraft system (CUAS) platform capable of autonomous detection, classification, tracking, and intercept of next generation UAS threats. • Deliver next generation shock-hydro-structure modeling and simulation (M&S) capability enabling blast loading of structures with complex internal components, blast induced material failure, and munition response during impact and penetration events. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.259 million between FY 2024 and FY 2025 supports the continued development of decision tools and models to improve or enhance munitions.			
Accomplishments/Planned Programs Subtotals	18.291	19.567	19.826

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603288D8Z / *Science and Technology (S&T) Analytic Assessments*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	129.454	28.168	24.328	30.594	-	30.594	31.124	31.647	32.207	32.732	-	-
328: *Science and Technology Analytic Assessments*	117.483	21.060	17.335	22.728	-	22.728	23.018	23.297	23.610	23.884	-	-
177: *Technology Watch/Horizon Scanning*	11.971	7.108	6.993	7.866	-	7.866	8.106	8.350	8.597	8.848	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This PE supports the Department's initiatives to Defend the Homeland, Deter Aggression, Prevail in Conflict, and Build an Enduring Advantage.

This PE directly supports the Office of Strategic Intelligence and Analysis (OSI&A) for the Office of the Under Secretary of Defense, Research and Engineering (OUSD(R&E)). OSI&A's campaign of analysis approach integrates intelligence reporting and independent technical expertise to execute comparative assessments. These assessments inform investment decisions and shape the development of innovative capabilities to address emerging threats and opportunities from a diverse range of state and non-state actors as outlined in the National Defense Strategy (NDS) and as reported through the Intelligence Community (IC). The complexity of capability gaps in the future operating environment combined with the speed of emerging threat development requires a broadly scoped "red vs blue" approach. This approach provides integrated baselines for OUSD(R&E) analyses and investment decisions that are reflective of cross-cutting Joint Force plans, missions, and concepts. Trends and potential impacts related to global critical and emerging technology developments are analyzed and assessed, and findings are integrated with IC reporting to enable decision advantage in OUSD(R&E) and inform strategies for maintaining technological superiority and modernizing key capabilities for the Joint Force.

Analysis and assessments are focused on challenges related to NDS and National Defense Science and Technology Strategy (NDSTS) objectives and competitors' research and development trends. Two lines of effort accomplish this mission:
1) Science and Technology (S&T) Analytic Assessments integrate information from the acquisition, intelligence, operational, and S&T communities to quantify key attributes of emerging critical challenges and assess counter technology opportunities. The framework includes execution of the following activities:
- Net Technical Assessments (NTA). OSI&A partners with Federally Funded Research and Development Centers, University Affiliated Research Centers, industry, and academia to conduct comparative assessments of critical technologies to determine technological advantage and inform investment decisions across the Department of Defense (DoD) S&T Enterprise. Critical technologies of interest to the DoD and strategic context drawn from the NDS, NDSTS, and DoD planning efforts set the bounds for the assessment of technological applications that could deliver operational advantage to the Joint Force along future development and deployment timelines.
- Operational and Technical Assessments. Evaluations of DoD operational scenarios and warfighting concepts that identify operational gaps, incorporating IC-derived adversary threat trends and the technical demands of the future operational environment to determine challenges that could be mitigated or eliminated through the application of emerging and disruptive technologies.

- Technology-based Wargames. Execution of an array of purpose-built games and workshops that integrate the operational, technology, and intelligence communities to characterize emerging technologies in the context of the future operational environment, evaluate their disruptive potential, and identify opportunities and challenges. Insights from these efforts inform programmatic and policy decisions related to the development of operational concepts across the Department.

2) Technology Watch and Horizon Scanning combines analysis of complex, unstructured, open-source data sets with intelligence reporting to enable monitoring and analysis of global research and development activities, underpinning characterization of the global technology environment and informing portfolio investment decisions across the DoD S&T Enterprise. These characterizations establish the global technology landscape that informs OSI&A S&T analytic assessment efforts and frames the larger campaign of analysis. The framework includes the following activities:
- Technology Watch. Analysis of global open-source science, technology, research, and development efforts and in-person conference, symposium, and workshop attendance to characterize the global landscape of known science, technology, and concepts and to identify trends that can provide indicators and warnings of disruptive technology advances. Integrating the methodologies and findings from technology forecasting, maturation assessments, and NTA efforts supports global research watch activities to identify technological development areas for research and investment.
- Horizon Scanning. Systematic execution of analytic techniques applied to large, complex open-source data for the identification of emerging science and technology capable of altering the future operating environment.
- Intelligence Integration. Structured execution of recurring technical exchanges between the OUSD(R&E) stakeholders and S&T intelligence subject matter experts. These engagements enable the direct exchange of OUSD(R&E) intelligence needs and IC finished intelligence products to compliment open-source findings and establish a comprehensive understanding of the global technology landscape. Additionally, OUSD(R&E) level input and perspectives support IC scientific and technical intelligence initiatives and inform intelligence community priorities, investment decisions, and strategic direction.
- International Partner Collaboration. Cooperative identification and early-stage investigation of emerging technologies that generate opportunities and solve critical challenges common to the national security of the U.S. and our international partners.

Due to the emergent nature of challenges and threats, specific analytic foci are unlikely to be identified beyond the current budget year. The process for developing and executing assessments can span fiscal years and may have multiple phases as trends progress and new information arises through open-source technology trend analysis and intelligence reporting.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603288D8Z *I Science and Technology (S&T) Analytic Assessments*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	28.168	24.328	24.840	-	24.840
Current President's Budget	28.168	24.328	30.594	-	30.594
Total Adjustments	0.000	0.000	5.754	-	5.754
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustment	-	-	5.754	-	5.754

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 328: *Science and Technology Analytic Assessments*		
Congressional Add: *Strategic Multilayer Assessment Cell*	5.500	-
Congressional Add Subtotals for Project: 328	5.500	-
Congressional Add Totals for all Projects	5.500	-

Change Summary Explanation

FY 2025 increase of $5.692 million enables an agile and responsive resourcing posture to execute net technical assessments and analyses of global emerging threats and technological developments, in addition to collaborative analysis with international partners. Funds realigned from PE0602251D8Z227 - Applied Research for the Advancement of S&T Priorities. In addition, funding increase of $0.062 million is for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603288D8Z / *Science and Technology (S&T) Analytic Assessments*	Project (Number/Name) 328 / *Science and Technology Analytic Assessments*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
328: *Science and Technology Analytic Assessments*	117.483	21.060	17.335	22.728	-	22.728	23.018	23.297	23.610	23.884	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Science and Technology (S&T) Analytic Assessments Project code funds comparative assessments that integrate intelligence community insights and independent technical analysis to shape the development of innovative capabilities and address emerging threats from a diverse range of state and non-state actors as outlined in the National Defense Strategy (NDS) and as reported through the Intelligence Community (IC).

Engineering and technology analysis is performed by Federally Funded Research and Development Centers, University Affiliated Research Centers, industry, and academia partners focused on analysis of critical Department of Defense (DoD) S&T investments and breakthroughs by U.S. strategic competitors. These assessments compare global science, technology, research and development efforts, and current state-of-the-science, and identify technology development strategies. Main lines of effort include:
- Net technical assessments that characterize the technical state-of-the-art, measure relative national standing, and identify and assess technology applications for accomplishing strategically important military objectives to inform the Office of the Under Secretary of Defense, Research and Engineering (OUSD(R&E)) technology development and investment decisions.
- Quantitative, engineering-level analyses of novel technologies and concepts that identify potential areas of future technology overmatch.
- Independent assessments of critical technology research and development efforts that compare U.S. and competitor nations.

Operational and technical assessments identify prioritized operational issues and associated technology focus areas through comprehensive kill chain analysis across all domains through the year 2040. Characterizations of future operating environments and associated challenges inform the scoping and design efforts of S&T and engineering analyses for DoD. Main lines of effort include:
- Technology-based Wargames that integrate information from the intelligence, technology, and operational communities to identify opportunities stemming from emerging technologies and evaluate the demands of the future operational environment. The outputs inform future concept and capability development, prototyping and experimentation activities, threat forecasting, and DoD S&T investments.
- Operational Analyses focused on the dynamic interaction of U.S., ally and partner, and adversary military capabilities in a future operating environment. This analysis fuses IC assessments of future threats and operational impacts to the Joint Force, to enable technology-specific analysis in areas of critical challenge or opportunity.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Science and Technology Analytic Assessments	15.560	17.335	22.728
Description: The Science and Technology (S&T) Analytic Assessments Project code supports the development of innovative capabilities to meet emerging threats from the diverse range of state and non-state actors confronting the U.S. These capabilities			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603288D8Z / *Science and Technology (S&T) Analytic Assessments*	**Project (Number/Name)** 328 / *Science and Technology Analytic Assessments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
support the objectives of the NDS and the National Military Strategy. Throughout this process the analysis will be tightly coupled with both the IC and the operational community. ***FY 2024 Plans:*** Engineering and Technology Analysis: - Conduct engineering- and physics-based threat assessments informed by IC reporting to identify gaps in U.S. capabilities. - Conduct analysis of novel technology and concepts to address capability gaps and potential counters to emerging technologies in future operating environments. - Conduct independent assessments of U.S. and strategic competitors' critical capabilities and technology development. - Conduct comparative assessments of and report on efforts by the U.S. and the People's Republic of China to advance critical modernization technologies with military applications (FY 2022 NDAA §1251). Operational and Technical Assessment: - Update foundational data of U.S. and adversary capabilities to enable mission-oriented analysis of emerging threats. - Assess anticipated U.S. and adversary capability solutions in the context of DoD-approved operational scenarios and associated timelines to illustrate areas of potential operational overmatch. - Produce comparative assessments of existing and planned U.S. capabilities and weapons systems characterizing emerging threat systems and capabilities in future operating environments. - Design and execute technology-based wargames to inform and align DoD modernization activities with joint concept and capability requirements and threat forecasting. ***FY 2025 Plans:*** Engineering and Technology Analysis: - Continue to conduct engineering- and physics-based threat assessments informed by IC reporting to identify gaps in U.S. capabilities. - Continue to conduct analysis of novel technology and concepts to address capability gaps and potential counters to emerging technologies in future operating environments. - Continue to conduct independent assessments of U.S. and strategic competitors' critical capabilities and technology development. Operational and Technical Assessment: - Continue to update foundational data of U.S., ally and partner, and adversary capabilities to enable mission-oriented analysis of emerging threats.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603288D8Z / *Science and Technology (S&T) Analytic Assessments*	**Project (Number/Name)** 328 / *Science and Technology Analytic Assessments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue to assess anticipated U.S., ally and partner, and adversary capability solutions in the context of DoD-approved operational scenarios and associated timelines to illustrate areas of potential operational overmatch. - Continue to produce comparative assessments of existing and planned U.S. capabilities and weapons systems characterizing emerging threat systems and capabilities in future operating environments. - Continue to design and execute technology-based wargames to inform and align DoD modernization activities with joint concept and capability requirements and threat forecasting. Net Technical Assessments: - Assess technological state-of-the art and trends to capture relative national standing for focal technologies. - Explore military operational implications to understand operational relevance, technology timeline, and uncertainties associated with the applications of the focal technologies. - Integrate key competitor perspectives through intelligence community engagement ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2025 increase of $5.346 million funds: - Net Technical Assessment efforts - An agile analytic capability that is responsive to emerging threats and technological developments that arise through open-source analysis and intelligence reporting.			
Accomplishments/Planned Programs Subtotals	15.560	17.335	22.728

	FY 2023	FY 2024
Congressional Add: Strategic Multilayer Assessment Cell	5.500	-
FY 2023 Accomplishments: Funding in FY 2023 will allow execution of the Strategic Multilayer Assessment (SMA) Cell. The SMA Cell supports senior leadership in the Combatant Commands (CCMDs) with actionable assessments of complex operational and technical challenges. SMA efforts leverage multi-agency, multi-disciplinary approaches to answer the Combatant Commanders' key strategic questions that are not within the DoD's core competency. The assessments help maintain our competitive advantage in an increasingly complex global environment. SMA assessments are framed during the year of execution and are in response to specific tasking from senior leadership in the CCMDs. The SMA Cell researches options from across the U.S. Government, foreign partners, academia, and the private sector. Joint Chiefs of Staff Directorate for Operations (J-3) and the Office of the Under Secretary of Defense for Research and Engineering share management and oversight		

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603288D8Z / *Science and Technology (S&T) Analytic Assessments*	**Project (Number/Name)** 328 / *Science and Technology Analytic Assessments*

	FY 2023	FY 2024
responsibilities for SMA efforts. Joint Chiefs of Staff Directorate for Operations (J-3) plans and executes SMA efforts.		
Congressional Adds Subtotals	5.500	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603288D8Z / *Science and Technology (S&T) Analytic Assessments*	Project (Number/Name) 177 / *Technology Watch/Horizon Scanning*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
177: *Technology Watch/Horizon Scanning*	11.971	7.108	6.993	7.866	-	7.866	8.106	8.350	8.597	8.848	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Technology Watch/Horizon Scanning (TW/HS) Project Code supports emerging Science and Technology (S&T) characterization through the identification of technology research trends and the forecasting of concepts and technology maturation with the potential for military application through 2040. TW/HS activities inform the Department's investment decisions to achieve global competitive advantage. The program provides tailored technical assessments that identify the military relevance, research opportunities, and investment targets for emerging S&T. The Office of Strategic Intelligence and Analysis (OSI&A) enables intelligence-informed decision advantage across the S&T enterprise portfolio and informs the U.S. S&T intelligence posture by establishing linkages across the Office of the Under Secretary of Defense, Research and Engineering (OUSD(R&E)) and the Intelligence Community (IC) entities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Technology Watch/Horizon Scanning	7.108	6.993	7.866
Description: The program utilizes multiple analytic methodologies to identify nascent technologies and characterize the future global S&T landscape. This characterization, in combination with other technical analysis performed by OSI&A, will inform strategic technology development decisions across the OUSD(R&E) Enterprise. OSI&A works in collaboration with international allies and partners to further the field of critical and emerging technology research and analysis. ***FY 2024 Plans:*** Technology Watch and Forecasting: - Conduct systematic analysis (i.e., horizon scan) of complex, unstructured open-source data to identify emerging science, technology, and concepts. - Characterize the global landscape of known science, technology, and concepts to identify trends that can provide indicators and warnings of disruptive technology advances. - Integrate methodologies and findings from technology scanning and forecasting, maturation assessments, data analysis, and net technical assessment efforts to characterize global developments in science and technology research. Intelligence Integration: - Conduct formal technical exchanges between the OUSD(R&E) stakeholders and IC subject matter experts to establish a common understanding of global technology developments.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603288D8Z / *Science and Technology (S&T) Analytic Assessments*	**Project (Number/Name)** 177 / *Technology Watch/Horizon Scanning*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Coordinate intelligence community (IC) support for the Office of Strategic Intelligence and Analysis (OSI&A)-sponsored technical analysis and independent comparative technology assessments and provide Office of the Secretary of Defense (OSD)-level support to Science and Technology (S&T) intelligence initiatives. - Direct the Defense Intelligence Enterprise to provide analytic input to Research and Engineering (R&E)-defined critical intelligence needs and disseminate the IC response to R&E stakeholders. International Partner Engagement: - Implement and execute a strategy for collaborating on the discovery and early-stage exploitation of scientific breakthroughs and emerging technologies through bilateral and multinational partnerships. ***FY 2025 Plans:*** Technology Watch and Forecasting: - Continue to conduct systematic analysis of scientific research databases to identify emerging science, technology, and concepts. - Continue to characterize the global landscape of known science, technology, and concepts to identify trends that can provide indicators and warnings of disruptive technology advances. - Continue to integrate methodologies and findings from technology scanning and forecasting, maturation assessments, data analysis, and net technical assessment efforts to characterize global developments in science and technology research. - Advance the established U.S. – UK S&T Futures bilateral strategy through the continued discovery and early-stage exploitation of scientific breakthroughs to inform research and investment decisions that capitalize on burden sharing. - Collaborate with FVEY partner nations through The Technical Cooperation Program to advance the science, methodologies, and tools of technology foresight analysis, model Defense systems, and explore the operational implications of technology application at the strategic, joint all domain level. - Execute a collaborative campaign of analysis strategy with Australia, identifying emerging technologies, forecasting technology trends through 2040, and characterizing technology superiority relative to common adversaries. - Leverage partner nations' unique S&T innovation ecosystem to identify opportunities for co-development and co-investment that will accelerate the exploration, acquisition, and integration of emerging technologies into defense portfolios. Intelligence Integration: - Continue to conduct formal technical exchanges between OUSD(R&E) stakeholders and IC subject matter expert to establish a common understanding of global technology developments. - Continue to coordinate IC support for OSI&A-sponsored technical analysis and independent comparative technology assessments and provide OSD-level support to S&T intelligence initiatives.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603288D8Z / *Science and Technology (S&T) Analytic Assessments*	**Project (Number/Name)** 177 / *Technology Watch/Horizon Scanning*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue to direct the Defense Intelligence Enterprise to provide analytic input to OUSD(R&E)-defined critical intelligence needs and disseminate the IC response to OUSD(R&E) stakeholders. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.858 million between FY 2024 and FY 2025 is the result of increased collaboration with international allies and partners.			
Accomplishments/Planned Programs Subtotals	7.108	6.993	7.866

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603289D8Z *I Advanced Innovative Analysis and Concepts*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	336.278	51.696	55.626	56.390	-	56.390	57.628	58.829	60.066	61.268	Continuing	Continuing
329: *Advanced Innovative Analysis and Concepts*	336.278	51.696	55.626	56.390	-	56.390	57.628	58.829	60.066	61.268	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression and Prevail in Conflict, Defend the Homeland, Build Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

The Strategic Capabilities Office (SCO) conducts analysis to identify and accelerate the development, demonstration, and transition of operationally impactful capabilities to shape and counter emerging threats and increase the lethality of the Joint Force in contested environments. In a partnership endeavor across the Office of the Secretary of Defense (OSD), Joint Staff, Combatant Commands (CCMDs), the Services, the Intelligence Community (IC), and other U.S. Government agencies, the SCO combines capability innovation with new concepts for warfighting that leverage new technology areas, including autonomy, artificial intelligence, and machine learning. SCO conducts projects on accelerated timelines, in all warfighting domains, at any classification or access level.

The Advanced Innovative Analysis and Concepts program supports development, study, and analysis of integrated concepts and prototypes, analysis in support of ongoing efforts to shape and counter emerging threats, cross-Service and cross-Defense/Intelligence concepts, and red-teaming. Projects focus on proving component and subsystem maturity prior to integration in major systems, and may involve risk reduction initiatives. This program also supports the development of concept proposals for assessment by the Technical and Transition Cross Functional Teams established in accordance with the National Defense Authorization Act (NDAA) for FY 2020 for development under the Advanced Innovative Technologies Program Element. Due to the nature of these projects, specific applications and detailed plans are available at a higher classification level.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603289D8Z *I Advanced Innovative Analysis and Concepts*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	53.176	55.626	56.844	-	56.844
Current President's Budget	51.696	55.626	56.390	-	56.390
Total Adjustments	-1.480	0.000	-0.454	-	-0.454
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.005	-			
• SBIR/STTR Transfer	-1.475	-			
• Program adjustment	-	-	-0.454	-	-0.454

Change Summary Explanation

FY 2023 was reduced for SBIR/STTR transfers to the executing program, and reduced for cancelled accounts.
FY 2025 was reduced to meet DoD overall funding reductions, which were spread to mitigate impact.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603289D8Z / *Advanced Innovative Analysis and Concepts*	Project (Number/Name) 329 / *Advanced Innovative Analysis and Concepts*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
329: *Advanced Innovative Analysis and Concepts*	336.278	51.696	55.626	56.390	-	56.390	57.628	58.829	60.066	61.268	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Strategic Capabilities Office (SCO) conducts analysis in support of ongoing efforts to shape and counter emerging threats, with special emphasis on: innovative and architecture-level concepts, cross-Service and cross-Defense/Intelligence concepts, red-teaming, and on a case-by-case basis, research and development projects to demonstrate new concepts. SCO identifies, analyzes, and accelerates the development, demonstration, and transition of selected capabilities to shape and counter emerging threats, and to improve U.S. security posture. In a partnership endeavor across the Office of the Secretary of Defense (OSD), Joint Staff, Combatant Commands (CCMDs), the Services, the Intelligence Community (IC), and other U.S. Government agencies, SCO combines capability innovation with concepts of operation to develop novel, high-leverage approaches to address pressing national security challenges. SCO conducts projects on accelerated timelines, at any classification or access level.

The Advanced Innovative Analysis and Concepts program supports development, study, and analysis of integrated concepts and prototypes, analysis in support of ongoing efforts to shape and counter emerging threats, cross-Service and cross-Defense/Intelligence concepts, and red-teaming. Projects focus on proving component and subsystem maturity prior to integration in major systems, and may involve risk reduction initiatives. Due to the nature of these projects, specific applications and detailed plans are available at a higher classification level.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Innovative Analysis and Concept Generation	29.864	30.081	30.603
Description: The Strategic Capabilities Office conducts analysis, studies, demonstrations of integrated concepts and prototypes, component and subsystem maturation, and risk-reduction demonstrations in support of ongoing efforts to shape and counter emerging threats, and develops project proposals for prototyping under the Advanced Innovative Technologies program. Due to the nature of these projects, specific applications and detailed plans are available at a higher classification level. ***FY 2024 Plans:*** Continue to innovate in partnership with Services Program Offices and CCMDs to identify game-changing uses of existing and mature systems and technologies to prepare for presentation to the Cross Functional Teams. ***FY 2025 Plans:*** Continue to innovate in partnership with Services Program Offices and CCMDs to identify game-changing uses of existing and mature systems and technologies to prepare for presentation to the Cross Functional Teams. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603289D8Z / *Advanced Innovative Analysis and Concepts*	**Project (Number/Name)** 329 / *Advanced Innovative Analysis and Concepts*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The increase will fund the increasing costs for studies to identify high-impact concepts for prototype development.			
Title: Formulation and Risk Reduction ***Description:*** Subsequent to review and recommendation of project concepts by the Technical and Transition Cross Functional Teams, the Strategic Capabilities Office performs engineering trade studies and conducts component tests to prepare selected projects to be ready to enter into full prototype development under the Advanced Innovative Technologies program. Activities, such as proving component and subsystem maturity prior to integration in major systems, are intended to finalize key requirements to reduce technical risk during prototype development. Due to the nature of these projects, specific applications and detailed plans are available at a higher classification level. ***FY 2024 Plans:*** Conduct formulation and risk reduction for five projects reviewed by the Cross Functional Teams and proposed to begin 6.4 work in FY 2025. ***FY 2025 Plans:*** Conduct formulation and risk reduction for five to six projects reviewed by the Cross Functional Teams and proposed to begin 6.4 work in FY 2026. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase will fund the increasing costs to conduct formulation and risk reduction activities to allow projects selected to enter Formulation in FY 2025 to be ready to enter Execution in FY 2026.	21.832	24.000	24.200
Title: Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) ***Description:*** This project includes estimates of funds required for SBIR/STTR based upon planned extramural research and development spending. These funds are transferred to the SBIR/STTR programs in the year of execution. ***FY 2024 Plans:*** Funding will be transferred to the Department's SBIR and STTR programs in the year of execution. ***FY 2025 Plans:*** Funding will be transferred to the Department's SBIR and STTR programs in the year of execution. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase is due to planned extramural research and development spending.	-	1.545	1.587
Accomplishments/Planned Programs Subtotals	51.696	55.626	56.390

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603289D8Z / *Advanced Innovative Analysis and Concepts*	**Project (Number/Name)** 329 / *Advanced Innovative Analysis and Concepts*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603330D8Z / *Quantum Application*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	75.000	69.290	-	69.290	69.410	69.450	69.732	73.035	Continuing	Continuing
441: *Quantum Industrial Base Acceleration*	0.000	-	-	5.521	-	5.521	5.646	5.690	5.971	8.281	Continuing	Continuing
444: *Quantum Transition Acceleration*	0.000	-	75.000	63.769	-	63.769	63.764	63.760	63.761	64.754	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiative to Build Sustainable and Long-Term Advantage.

Quantum Technology is approaching a tipping point that will determine how quickly it can make an impact. If the United States can stay on pace, many important outcomes for the Department of Defense (DoD) can be realized including robust position, navigation and timing for DoD freedom of operations with precision strike even with contests in spectrum, space, or cyber operations. Also, greatly enhanced capabilities in the spectrum giving the DoD significant advantages for Electronic Warfare (EW), Command, Control, and Communications (C3) and Intelligence, Surveillance, and Reconnaissance (ISR). Finally, quantum computation allowing rapid advances in materials and chemistry for advanced energetics, propulsion, and platform coatings, possibly optimization for material properties, logistics, and machine learning.

Without deliberately addressing these challenges, we risk slowdown of technological maturity. Two barriers to implementation are: 1) component and supply chain maturity of bleeding edge capability in photonics, including lasers, active light manipulation, light delivery, and packaging; and 2) the relative cost and workforce barrier for one Service or Agency to alone transition this complex and emerging technology for one particular mission while the missions enabled by quantum technology and the workforce are distributed among multiple Defense organizations.

This effort’s funding will improve quantum supply chain maturity and accelerate DoD priority quantum technology by overcoming these barriers.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603330D8Z / *Quantum Application*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	75.000	100.000	-	100.000
Current President's Budget	0.000	75.000	69.290	-	69.290
Total Adjustments	0.000	0.000	-30.710	-	-30.710
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-30.850	-	-30.850
• Economic Assumptions	-	-	0.140	-	0.140

Change Summary Explanation

Program adjustments of -$30.710 million in FY 2025 consists of the following:
-$4.850 million realignment to PE 0603379D8Z Advanced Technical Integration
-$26.000 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603330D8Z / *Quantum Application*	Project (Number/Name) 441 / *Quantum Industrial Base Acceleration*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
441: *Quantum Industrial Base Acceleration*	0.000	-	-	5.521	-	5.521	5.646	5.690	5.971	8.281	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Department of Defense's (DoD) research and development of quantum technologies is critical to maintaining the Nation's technological superiority. But the transition of laboratory innovations to manufacturable products is hampered by immature quantum component technology and the need for specialized fabrication, integration and packaging processes to manufacture quantum devices.

This funding will identify detailed component requirements and promising technology solutions then develop those critical components. This effort will be coordinated with non-defense US Government agencies. The resulting component supply chain will enable defense applications of quantum technology as well as dual-use applications. This funding will leverage existing resources in academic institutions, national laboratories and private industries as well as other Defense programs such as Manufacturing Innovation Institutes and the Microelectronics Commons.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Quantum Supply Chain	0.000	-	5.521
Description: This effort focuses on identifying, developing and maturing critical components supporting technology for atomic clocks, quantum sensors, and quantum computers. Supports aligning and leveraging multiple organizations for DoD needs across academic institutions, national laboratories, non-profits, and private industry. This effort will accelerate the transition of laboratory-scale systems to manufacturable commercial products. This effort will fund various studies that will identify various components required to shorten the supply chain gaps within industry and academia. The specific critical component efforts funded by this project include: - Transitioning low noise Near Infrared (NIR) lasers for quantum sensors. - Multi-Project Wafer (MPW) service runs at AIM-Photonics for novel quantum-specific component devices. ***FY 2025 Plans:*** - Continued collaboration begun under P-code 444 with component activities within DoD (e.g. the Microelectronics Commons and the DoD Manufacturing Innovation Institutes). - Initiate prototyping of two different NIR laser components identified within P-code 444: Quantum Transition Acceleration. -Establish process with US Govt. Agencies and US companies to identify, coordinate and prioritize critical component needs. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603330D8Z / *Quantum Application*	**Project (Number/Name)** 441 / *Quantum Industrial Base Acceleration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The increase of $5.650 between FY 2024 and FY 2025 was to create a separate P-code that focused on the supply chain tasks previously occurring in P444.			
Accomplishments/Planned Programs Subtotals	0.000	-	5.521

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603330D8Z / *Quantum Application*	Project (Number/Name) 444 / *Quantum Transition Acceleration*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
444: *Quantum Transition Acceleration*	0.000	-	75.000	63.769	-	63.769	63.764	63.760	63.761	64.754	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Department of Defense (DoD) has pioneered and advanced classical sensor technology for decades. Over the past years, quantum sensing technology has shown the ability to meet program level metrics throughout DoD R&D programs. In order to sustain technological superiority, the Department must continue to work to transition sensor research and development for United States Air Force, Army and Navy applications.

This funding will allow OUSD(R&E) oversight of a multi-service program designed to develop quantum sensing technology capable of integration into multiple DoD applications in each of the Army, Navy, and Air Force. As structured, the program will be able to maximize the utilization of the military department's distributed technical expertise and capabilities. OUSD(R&E) will contribute connections to program of record and the joint force strategic goals, connectivity and integration between organizations, risk reductions to individual project through coordinated work on technology challenges, and connectivity to other R&E capabilities including the other critical technology areas, basic science office, manufacturing innovation, and the microelectronics commons. OUSD(R&E) will confirm all developed quantum technology meets specified requirements ensuring a more diverse use case for all developed technology with an industry base that can sustain DoD needs. Projects will include testing and evaluation, device integration, and application analysis to aid in future acquisition and sustainment of innovative technologies developed in DoD research programs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Quantum Sensors	-	75.000	63.769
Description: The Department of Defense's (DoD) research and development of quantum technologies is critical to maintaining the Nation's technological superiority. This effort will focus on maturing, demonstrating, and transitioning quantum inertial sensors, gravity sensors, atomic clocks, and quantum electro-magnetic sensors. The specific quantum technologies efforts are: - Joint (USAF/USN) Magnetic Navigation program led by the USAF using quantum magnetic sensors and magnetic maps to navigate aerial platforms without GPS. - Joint (USAF/USN) Inertial Sensing program utilizing accelerometer and gyroscopes to track position, orientation and velocity of a moving object in a non-jammable mode of operations: important for strategic platforms in multiple domains. - Joint (USN/USA) Magnetometer program led by ONR to enable a new generation of unmanned vehicles to create magnetic anomaly detection capabilities for both land and sea. - Quantum accelerometer program led by ONR to calibrate guidance accelerometers at sea without having to come back to port. - Joint (USA/USN) Atomic Clock program led by ARL providing the next generation of strategic atomic clocks.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603330D8Z / *Quantum Application*	**Project (Number/Name)** 444 / *Quantum Transition Acceleration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Start Modeling and Simulation (M&S) of quantum technology in operational scenarios while comparing to commercial alternatives if available. - Measure quantum sensor environmental capabilities in various operationally relevant situations. - Initiate size, weight and power (SwaP) redesign of quantum sensors, ensuring the future quantum sensors are compatible with current/future military applications. - Conduct initial systems requirement review (SRR) with industry contractors outlining integration plan for quantum sensors into specified applications. - Initiate documentation of military-grade technical data package outlining the specifications for quantum sensors. - Initialize critical technology identification and assessment procedure with stake-holders across government and industry. - Initialize early projects that can leverage existing activities within DoD (e.g. the Microelectronics Commons and the DoD Manufacturing Institutes) - Initiate projects identified as supporting improved manufacturability or performance of the quantum sensors funded through this Program Element. - Establish information mechanism to more easily integrate quantum specific components through Process Design Kit (PDK) and/or Assembly Design Kits (ADK). This PDK and/or ADK will combine multiple information libraries from multiple fabrication sources (e.g. national laboratories, manufacturing institutes, and private fabrication facilities). - Establish National Laboratory testbed to identify the hardest integration problems associated with quantum technology and develop technology solutions for those problems. ***FY 2025 Plans:*** - Utilizing technology developed within this effort, initiate planning for future Joint AUKUS PNT demonstrations. - Execute atomic clock demonstrations, showcasing current Australia, United Kingdom and United States technology. - Finalize SwaP redesign of quantum sensors (magnetometers, accelerometers and gravimeters), ensuring the transitioning quantum sensors are compatible with current/future military applications. - Conduct preliminary design reviews (PDR) with industry contractors validating the redesign and system requirements meet military application specifications. - Initiate planning for OUSD led quantum sensing demonstration. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $11.360 million between FY 2024 to FY 2025 is due to P-code 441 absorbing all Supply Chain plans and DoD overall funding reductions which were spread to mitigate impact.			
Accomplishments/Planned Programs Subtotals	-	75.000	63.769

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603330D8Z / *Quantum Application*	**Project (Number/Name)** 444 / *Quantum Transition Acceleration*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	100.206	67.646	104.729	109.614	-	109.614	167.818	173.698	184.857	191.354	Continuing	Continuing
434: *DIU*	100.206	67.646	104.729	109.614	-	109.614	167.818	173.698	184.857	191.354	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

On April 4, 2023, the Secretary of Defense elevated DIU as a direct report, placing the Defense Innovation Unit (DIU) under the Secretary's authority, direction and control and provided guidance on DIU's reporting and management structure. This change significantly increased the scope and scale of DIU's responsibilities and authorities as reflected in the DIU 3.0 strategy. This funding request reflects some of the initial requirements to support these elevated responsibilities. Further resourcing impacts of the codification of DIU in the National Defense Authorization Act of Fiscal Year 2024 and the elevation of the DIU Director as a Principal Staff Assistant (PSA) to the Secretary of Defense will follow based on a full assessment of those needs.

This program supports the Department's initiatives to build enduring advantages across the defense ecosystem - the Department of Defense, the defense industrial base, and the array of private sector enterprises and academia that create and sharpen the Joint Force's technological edge, with a focus on innovation and rapid adjustment to new strategic demands outlined in the 2022 National Defense Strategy (NDS).

The DIU mission is to strengthen U.S. national security by accelerating the adoption of commercial technology throughout the military and growing the national security innovation base. DIU partners with organizations across the DoD and the interagency to rapidly prototype, field, and scale commercially derived solutions to meet the most critical operational capability gaps identified by the Department with the focus, speed, and scale required to help deter major conflict and win if forced to fight. With offices in Silicon Valley, Boston, Austin, Chicago, and the Pentagon, DIU is able to attract the best and brightest talent and cutting-edge solutions.

For the Department of Defense (DoD) to effectively implement the NDS and counter the pacing challenge of the People's Republic of China (PRC) while simultaneously addressing the other strategic threats facing the nation, it must leverage commercial technology with the focus, speed, and scale necessary to deter major conflict and win if forced to fight. The Secretary of Defense's decision to realign DIU as a direct report and empower it to provide leadership, namely through serving as the Advisor to the Secretary on commercial technology innovation and chairing the Deputy's Innovation Working Group is a reflection of this imperative.

Spurred by trillions of dollars of private investment, innovation in many critical areas of technology central to military power is proceeding at a much faster rate in the private sector than in the traditional defense sector. Progress in 11 of the 14 critical technology areas identified by the Undersecretary of Defense for Research and Engineering (R&E) is primarily led by the commercial sector, with the most cutting-edge technology more likely to occur in its research and development pathways, tested and refined through its relentless market-driven requirements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*

DIU strengthens the Department's ability to rapidly prototype, acquire and field commercial technology at a pace that effectively deters our adversaries and helps ensure victory if we are forced to fight. Working across the country, and in collaboration with our allies and partners, DIU is developing new ways of doing business, growing our national security innovation base to include more "non-traditional" companies that had previously not collaborated with the military, working with traditional vendors in novel ways to increase efficiency and efficacy, and challenging innovators to share their knowledge and expertise in support of our nation's defense.

Through a competitive prototype process, DIU identifies and provides access to technology companies and products on behalf of DoD partners. Additionally, DIU executes projects to leverage commercial sector technology analogous to military applications thereby increasing dual-use technology agility for the DoD. DIU funds facilitate the award of projects that can augment commercial technologies, existing government-owned capabilities, or concepts for defense application.

DIU focuses on six technology areas where commercial industry is the lead:

• Artificial Intelligence (AI)/ Machine Learning (ML) – Applying AI/ML learning to accelerate critical decision making and operational impact.
• Autonomy – Adopting and countering autonomous systems with a focus on human-machine interaction and scalable teaming.
• Cyber – Making enterprise combat information open, accessible, and secure for defense personnel across the globe.
• Energy – Leveraging proven advancement in energy and materials technology to enhance capabilities and strengthen resilience across installation and distributed operations.
• Human Systems – Optimizing the human system and its enabling platforms through enhanced equipment, innovative training, and novel health applications.
• Space – Developing on-demand access to space, persistent satellite capabilities, and broadband space data transfer.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	69.925	104.729	95.210	-	95.210
Current President's Budget	67.646	104.729	109.614	-	109.614
Total Adjustments	-2.279	0.000	14.404	-	14.404
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.272	-			
• Cancelled Account	-0.007	-	-	-	-
• Program Adjustment	-	-	14.404	-	14.404

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 434: *DIU*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Small Craft Electric Propulsion*	5.000	-
Congressional Add: *Program Increase*	22.000	-
Congressional Add Subtotals for Project: 434	27.000	-
Congressional Add Totals for all Projects	27.000	-

Change Summary Explanation

-The program increase of $0.356 million is for Economic Assumptions. A reduction of $0.952 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. In addition, a programmatic increase of $15 million is to increase efforts in facilitating additional follow-on prototype contract awards.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603342D8Z / *Defense Innovation Unit (DIU)*	Project (Number/Name) 434 / *DIU*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
434: *DIU*	100.206	67.646	104.729	109.614	-	109.614	167.818	173.698	184.857	191.354	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

DIU increases the Department's access to commercial technologies and talent, with the ultimate goal of fielding technology at a pace that effectively deters our adversaries and helps ensure victory if we are forced to fight. Consistent with the Administration's 2023 National Defense Strategy and the National Defense Science and Technology Strategy, this new era of competition requires technological superiority to ensure the United States' ability to project power, maintain international norms and rule of law, provide credible deterrence, and prevail in conflict.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense Innovation Unit (DIU)	25.646	36.729	51.614

Description: The U.S. DoD relies on innovation to maintain our nation's ability to deter, and if need be, prevail in conflict. With Silicon Valley, Boston, Austin, Chicago, and the Pentagon, DIU serves as a bridge between those in the U.S. Military executing national security and defense missions with companies developing cutting-edge commercially derived technology. DIU continuously experiments with methods to identify, contract, prototype, and transition novel commercial solutions from leading companies to meet the most critical operational capability gaps identified by the Department with the focus, speed, and scale required to help deter major conflict and win if forced to fight. The end goal is to accelerate DoD adoption of cutting-edge technology and grow the national security innovation base to support U.S. military-technical superiority.

FY 2024 Plans:

Execute on DIU 3.0 Strategy focused on identifying and delivering cutting-edge commercial innovation to the warfighter to impact the most critical capability gaps identified by DoD partners in the Services, components, Defense Agencies, and Combatant Commands. DIU works to solve challenges and issues for the Department in areas such as artificial intelligence and machine learning, autonomy, cyber, energy, human systems, and space. The DIU Director also serves as the Advisor to the Secretary Defense on technology innovation, competition and strategic impact.

Based on its recent elevation by the Secretary, DIU will ensure that the Department can leverage the best of commercial technology and innovation at speed and scale to deter major conflict or win in forced to fight. DIU will amplify its coordination and collaboration both inside and outside the Department along eight lines of efforts: Focus, Scale, Innovation Community, Commercial Leverage, International, Trust/Momentum, Team/Culture, and Advise.

FY 2025 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*	**Project (Number/Name)** 434 / *DIU*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Execute at an accelerated pace on DIU 3.0 strategy leveraging the codification of DIU in the National Defense Authorization Act of Fiscal Year 2024 and momentum from throughout 2024, to: •Refocus DIU on a smaller number of critical technology solutions that make a meaningful difference to the nation's most strategic priorities, i.e., through real impact on Operational Plans, deterrence options, and scale operations •Ensure clarity of demand signals (Combatant Commands, Services, 4th Estate) for commercial technology solutions and staff support (Office of Secretary of Defense, Joint Staff, others) for commercial technology solutions to help the Department maximize likelihood of scale execution required for strategic impact; help develop and institutionalize appropriate processes to support scale at speed while managing risk •Catalyze/mobilize/enable nodes of commercial tech innovation across DoD into a coordinated community of innovation in support of Secretary and Deputy Secretary of Defense priorities •Serve as focal/bridging point to commercial tech sector and related private sector communities (e.g., financial), including at leadership level, in order to clarify the demand signals required for focus, speed, and scale, and best leverage those relationships to drive impact for DoD •Build an international community of innovation among our closest allies and partners, through exchange of Embeds, collaboration where appropriate, and sharing of best practices; deliver impact from that community for strategic technology priorities, strategic comms, and scale opportunity for commercial partners •Build trust and sense of momentum, in all directions (Congress, tech sector, Office of Secretary of Defense, Services, Combatant Commands) •Reshape DIU culture and team to deliver as a fully integrated disruptive change leader— and great teammate—on the broader DoD team. •Serve as senior advisor to the Secretary and Deputy Secretary of Defense on technology innovation, competition, and strategic impact Under DIU's expanded mandate, DIU will utilize the $15M increase towards the following efforts, in addition to efforts alongside innovation partners and end-customers in Services, Combatant Commands and Office of Secretary of Defense: •Critical Tech Industrial Base Expansion: $3M, invest in domestic & allied hardware companies (microelectronics, advanced comms, human systems) to protect them from adversary capital •Global Partnerships: $3M, expand DIU's collaboration to develop and deliver commercial technology solutions with allies & partners •Blue Unmanned Aircraft Systems: $2M, expedite delivery of commercial UAS for warfighter use •Director's Immediate Strategic Impact: $3M to enable DIU Director to rapidly address emerging needs with innovative solutions •Academic Innovation Network: $4M, Facilitate the sustainment of ongoing academic programming and current and future OnRamp Hub sites, along with support activities associated with these facilities. These support activities include the funding to support the broader Regional Network Team, and programs such as accelerators, prize challenges, and mentoring activities			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*	**Project (Number/Name)** 434 / *DIU*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
designed to support early-stage ventures and talent as they navigate the national security innovation base. Initial funding for OnRamp Hubs and associated programming provided by a FY 2023 congressional add in the NSIN PE 0603950D8Z and in FY 2025 combined with DIU's PE as part of the larger integration of NSIN into DIU. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The $15 million increase provides partial funding to execute the expanded mission set outlined in DIU 3.0 Strategy. In addition, an increase of $0.481 million is to increase efforts in facilitating additional follow-on prototype contract awards. A reduction of $0.952 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.356 million for Economic Assumptions.			
Title: Defense Advanced Battery Supply Chain	15.000	48.000	38.000
Description: DoD's low-demand signal and complex specifications for batteries make it difficult to engage with high-volume automotive battery suppliers. This typically results in the use of bespoke, inferior, and expensive batteries for military applications. The Defense Advanced Battery Supply Chain program currently encompasses both the Jumpstart for Advanced Battery Standardization (JABS) project and Family of Advanced Standard Battery (FAStBat) projects. The JABS project is advancing and assessing battery modules using novel commercial technology in various DoD platforms to achieve standardization of commercial EV batteries. This will allow for a more resilient supply as well as state-of-the-art battery systems for DoD platforms. The FAStBat project will prototype, test, and transition standardized battery families with completed Performance Specifications (MIL-PRFs) into their respective active Programs of Record. Both projects emphasize domestic onshoring while scaling battery production in the United States and reducing dependency on China and other foreign sources. These prototypes will assess and strengthen the manufacturing and supply chain resiliency of advanced batteries from domestic producers; accelerate efforts to partner with domestic battery producers targeting the commercial market for standardization and certification; align defense and Defense Industrial Base to commercial advanced battery development and production; address supply chain challenges for the use of commercial batteries. This funding supports the onshoring of domestic manufacturing, production, and standardization of advanced batteries at the raw material, battery cell, and module levels. ***FY 2024 Plans:*** Prototype, assess, and iterate standardized commercial battery modules: - Test modules in fully electric and hybrid tactical vehicles, storage systems, weapons, and maritime vessels to demonstrate military utility. - Increase access to developing domestic infrastructure to reduce costs and align defense capabilities to the rapidly evolving commercial sector standards.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*	**Project (Number/Name)** 434 / *DIU*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Execute additional supporting solicitations for prototypes of raw materials, battery safety management, and smaller form factors from commercial technologies. ***FY 2025 Plans:*** DIU will continue prototyping and validating multiple standardized commercial battery modules for a variety of platforms and initiate low-rate initial production of proven solutions for a variety of tactical vehicles, storage systems, weapons, and maritime vessels. Supporting on-shoring of domestic battery manufacturing capabilities is consistent with the Inflation Reduction Act. As a result of these efforts, the Defense Advanced Battery Supply Chain program will increase energy resilience with a competitively sourced network of domestic battery suppliers, reduce cost, ensure Soldier safety with fault-tolerant testing and certification, lower element costs, and leverage common charging infrastructure for preferred batteries across DoD Services. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The $10.000 million decrease between FY 2024 and FY 2025 is in alignment with final prototyping and initial low rate production of proven solutions of Defense Advanced Battery Supply Chain efforts.			
Title: Tactical Vehicle Hybridization	-	10.000	10.000
Description: Liquid fuels create battlefield logistics challenges and do not inherently support future operational requirements. However, fully electric tactical vehicles present their own battlefield logistics challenges, making quick conversion to pure-electric impractical. Further hybridizing vehicles is a critical step in the transition to an all-electric tactical fleet. By integrating commercial technologies on hybrid power systems, battery integration, and auxiliary power units, the DoD can speed up transition to electric by years. This funding will expand on the Tactical Vehicle Hybridization project launched by DIU in FY 2022 on behalf of the Army and the Marines. This funding will enable the commercial vendors to expand capabilities to the powertrain, allowing full hybrid options and expand the capabilities to the remaining variants of Tactical Vehicles. ***FY 2024 Plans:*** Expand the anti-idle hybridization capability to up to 5 more vehicle variants and add additional hybridization capabilities for the current set of tactical vehicle variants (Joint Light Tactical Vehicles (JLTV), Family of Medium Tactical Vehicles (FMTV), Heavy Expanded Mobility Tactical Truck (HEMITT), Logistic Vehicle System Replacement (LVSR), and High Mobility Multi-purpose-Wheeled Vehicle (HMMWV)). Capabilities include: hybridizing the powertrain, integrating auxiliary power units, and enabling battlefield recharging. ***FY 2025 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*	**Project (Number/Name)** 434 / *DIU*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
This funding will cover the next segment of hybridizing vehicles. This includes converting the power trains on legacy equipment and sourcing components for new acquisitions - such as the Range Extender. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change.			
Title: Synthetic Fuels for Contested Environments ***Description:*** The DoD lacks an ability to generate liquid fuel on-site. Defense fuel logistics are reliant on the global energy supply chain, which is easily disrupted. Current transport means are costly, inefficient, slow, and vulnerable to attack. Simultaneously, our fuel source is dependent on carbon-intense commercially procured fuel market. By creating a highly-agile, rapidly-deployable synthetic fuel production system (leave-behind or onboard) that could be dispersed throughout any area of responsibility (AOR) to produce just-in-time fuel at the edge, the DoD can mitigate the impact of fuel logistics disruption. ***FY 2024 Plans:*** Expand upon the FY 2023 DIU/Air Force project to produce synthetic hydrocarbon fuels (jet fuel, diesel, etc.) on-site, from ubiquitous feedstocks such as air or seawater, in a small, mobile form-factor that enables agile combat employment concepts and is carbon neutral. This funding will contribute to developing a fully containerized solution that can be employed in an austere environment. Additionally, this funding will enable the establishment of one or more fixed Sustainable Aviation Fuel (SAF) centers as required by the FY 2023 NDAA. ***FY 2025 Plans:*** This funding would expand and scale up the continuous generation of synthetic jet fuel, providing continuous refinement and sample testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change.	-	5.000	5.000
Title: Hydrogen at the Tactical Edge of Contested-Logistics (HyTEC) ***Description:*** Fuel supply chains are vulnerable to disruption and an energy dense alternative fuel is necessary to sustain operational capabilities and improve energy resilience. The DoD anticipates operating in austere, remote locations where efficient storage and use of energy will play a vital role in military operations. The Joint Force requires the capability to preposition, create, and distribute Operational Energy to the last tactical mile above and beyond the current inventory of legacy energy delivery platforms. Additionally, DoD lacks a systems-integrated solution that can provide energy generation and storage untethered from the larger logistics supply chain. The HyTEC program represents a solution to those DoD problems. Hydrogen technologies are	-	5.000	5.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*	**Project (Number/Name)** 434 / *DIU*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
commercially available in every stage of the hydrogen supply chain at high TRL, which would allow for onsite fuel production thereby reducing the demand for complex fuel logistics supply chains, particularly in contested environments. ***FY 2024 Plans:*** This funding will develop a working integrated solution capable of hydrogen (H2) generation, storage, and fueling for USMC and USN applications in contested environments. ***FY 2025 Plans:*** This funding will go towards integration testing in the field and applying this fuel generations towards H2-fueled platforms include, but are not limited to: tactical vehicles, ground-based robotics, stratospheric balloons, mobile storage, and multiple classes of unmanned aerial vehicles (UAVs). In addition, this funding will integrate INDOPACOM J4 equities into the project. This will include shipboard generation and transport of hydrogen to create an untethered fuel supply chain. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change.			
Accomplishments/Planned Programs Subtotals	40.646	104.729	109.614

	FY 2023	FY 2024
Congressional Add: Small Craft Electric Propulsion ***FY 2023 Accomplishments:*** This project leverages Congressionally directed funds toward commercial, electric personal watercraft capable of performing search and rescue (SAR) / Maritime Reconnaissance (MR) operations in littoral and riverine areas and off naval vessels. Funding was allocated during FY 2023 and is planned to be executed during the second year of the appropriation.	5.000	-
Congressional Add: Program Increase ***FY 2023 Accomplishments:*** Aligned with the FY 2022 National Defense Strategy (NDS) and COCOM needs. The Defense Innovation Unit (DIU) focused funding to accelerate the project timelines of a select number of FY 2023 priority projects and address capability common gaps for high-priority warfighter needs that the Department is not currently addressing. Key priorities identified include: Soldier Robotic Controller, Blue Unmanned Air System (UAS), Hybrid Space Architecture, Global Navigation Satellite System Spoofing, and Gig Eagle.	22.000	-
Congressional Adds Subtotals	27.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*	**Project (Number/Name)** 434 / *DIU*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• BA 04; O&M: *PE 0901583D8Z*	17.134	18.542	18.679	-	18.679	19.059	19.447	19.847	20.245	-	-

Remarks

NA

D. Acquisition Strategy

DIU primarily utilizes Title 10 U.S. Code § 4022 authority to prototype projects to enhance military effectiveness through the Commercial Solutions Opening (CSO) process.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603375D8Z / *Technology Innovation*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	18.505	123.837	74.549	-	74.549	0.145	0.141	0.142	0.145	Continuing	Continuing
375: *Technology Innovation*	-	18.505	41.881	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
377: *Anomalous Incidents Research*	-	0.000	81.956	74.549	-	74.549	0.145	0.141	0.142	0.145	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Strategic Attacks, Defend the Homeland, and Build a Resilient Joint Force and Defense Ecosystem.

In order to sustain technological superiority, the Department must take immediate advantage of the rapid evolution of emerging technologies that will be a source of battlefield advantage, when integrated with military systems and novel concepts of operation. This program focuses on rapidly moving these technologies to a Technology Readiness Level where they would then be ready to demonstrate in a prototyping or demonstration acceleration program to support warfighter needs. This funding is focused on supporting efforts within the Department’s Critical Technology Areas that contribute to the broader joint mission needs.

The ability to react quickly to emerging technologies is critical to staying ahead of our adversaries. For example, from FY 2020 - FY 2022 this program was able to quickly take advantage of breakthroughs at DARPA in quantum technology and initiated a project developing higher maturity prototypes using this DARPA technology for the Services to integrate into applications.

Leveraging these technologies from both defense and commercial sources, to include non-traditional sources such as startup companies, has the potential to rapidly address warfighter problem sets in areas where commercial innovation outstrips government investment in the same technology areas.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603375D8Z / *Technology Innovation*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	18.505	123.837	133.258	-	133.258
Current President's Budget	18.505	123.837	74.549	-	74.549
Total Adjustments	0.000	0.000	-58.709	-	-58.709
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-58.859	-	-58.859
• Economic Assumptions	-	-	0.150	-	0.150

Change Summary Explanation

The decrease of $58.859 million in FY 2025 is due to a realignment of $22.468 million to Program Element 0603133D8Z to support advances in the National Defense Strategy goal of Building Enduring Advantages, $33.271 million realignment to Program Element 0603000D8Z to support Start Energetics Leap Ahead, $2.368 million realignment to Program Element 0606300D8Z to support Defense Science Board (DSB) directed study requirements; and a reduction of $0.752 million in FY 2025 to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.150 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603375D8Z / *Technology Innovation*	Project (Number/Name) 375 / *Technology Innovation*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
375: *Technology Innovation*	-	18.505	41.881	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Tech Innovation program focuses on rapid innovation and demonstration efforts to address priority warfighter problem sets and National Defense Strategy focus areas. The current effort is focused on development of atomic clocks and biotechnology to accelerate progress along the Quantum Science and the Biotechnology Department of Defense (DoD) Modernization priority roadmaps. Combatant Commanders and the Intelligence Community (IC) continue to receive information that adversaries are looking to disrupt our common networked tactical picture by deny our access to a common time through the Global Positioning System (GPS). Under this program, commercial companies will mature DARPA's investment in innovative atomic clocks with tri-service technical oversight, creating a prototype Next Generation Atomic Clock (NGAC) for commercial production. This program will also demonstrate emerging biotechnology advancements to stimulate additional investment in biotechnology that can address DoD needs. The anomalous health incidents (AHI) program focuses on research and development to determine the cause of AHI affecting government personnel at locations around the world. The National Security Council led efforts include multi-Service/multi-Agency Laboratory collaboration to assess bioeffects and causes of AHI.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Technology Innovation	18.505	41.881	-
Description: The program focuses rapid innovation and demonstration in emerging defense and commercial technology areas to address the National Defense Strategy technology focus areas and priority warfighter problem sets. Prior year projects included funding of promising commercial advanced technology demonstration projects in the areas of biotechnology, quantum science, fully networked command, control, and communications, and space. ***FY 2024 Plans:*** Final NGAC design and critical design review will take place in FY 2024. Build of the prototype clock will commence thereafter. Demonstration of five biotechnology efforts started in FY 2023, including demonstration of biomagnets for low detectability of RF materials, Synbio food production at the point-of-need, biological automated collector/detector for expeditionary reconnaissance, probiotics for warfighter fatigue mitigation and biomanufacturing of synthetic proteins for non-lethal weapon applications. The program will also evaluate and select the next proposals for FY 2025 biotechnology projects. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $41.881 million is due to a realignment to Program Element 0603133D8Z to support advances in the National Defense Strategy goal of Building Enduring Advantages, Program Element 0603000D8Z to support Start Energetics Leap Ahead, and Program Element 0606300D8Z to support Defense Science Board (DSB) directed study requirements.			
Title: Anomalous Health Incidents (AHI)	0.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603375D8Z / *Technology Innovation*	**Project (Number/Name)** 375 / *Technology Innovation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The National Security Council led multi-Service/multi-Agency Laboratory collaboration will conduct research and development to determine the cause of AHI, in-depth bioeffects, and countermeasures. Will be executed out of P377, changes will be reflected in R-docs and Hyperion once Hyperion reopens.			
Accomplishments/Planned Programs Subtotals	18.505	41.881	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603375D8Z / *Technology Innovation*	Project (Number/Name) 377 / *Anomalous Incidents Research*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
377: *Anomalous Incidents Research*	-	0.000	81.956	74.549	-	74.549	0.145	0.141	0.142	0.145	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The program focuses on research and development to determine the cause of anomalous health incidents (AHI) affecting government personnel at locations around the world. The National Security Council led efforts include multi-Service/multi-Agency Laboratory collaboration to assess bioeffects and causes of AHI.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: AHI	0.000	81.956	74.549
Description: The National Security Council led multi-Service/multi-Agency Laboratory collaboration will conduct research and development to determine the cause of AHI, in-depth bioeffects, and countermeasures. ***FY 2024 Plans:*** Continue multi-Agency/multi-Laboratory efforts to determine the cause of AHI with additional bioeffects testing and development of countermeasures. ***FY 2025 Plans:*** Using equipment and instrumentation purchased and the research capabilities developed in FY 2024, perform novel research and evaluate the scientific and physics basis for certain hypotheses related to plausible mechanisms associated with the AHI phenomenon. Develop enhanced bioeffects testing and continue development and testing of countermeasures. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The reduction of $7.407 million between FY 2024 and FY 2025 was a decrease of $6.805 million between FY 2024 and FY 2025 due to a realignment to PE 0603133D8Z, PE 0603000D8Z, and PE 0606300D8Z; a reduction of $0.752 million in FY 2025 applied to meet DoD overall funding reductions, which were spread to mitigate impact; and an increase of $0.150 for Economic Assumptions.			
Accomplishments/Planned Programs Subtotals	0.000	81.956	74.549

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603375D8Z / *Technology Innovation*	**Project (Number/Name)** 377 / *Anomalous Incidents Research*

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603379D8Z / *Advanced Technical Integration*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	11.000	26.053	-	26.053	20.051	16.049	10.050	7.051	-	-
801: *Information Technology Integration*	0.000	0.000	11.000	26.053	-	26.053	20.051	16.049	10.050	7.051	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

Classified details provided upon request.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	11.000	0.000	-	0.000
Current President's Budget	0.000	11.000	26.053	-	26.053
Total Adjustments	0.000	0.000	26.053	-	26.053
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	26.000	-	26.000
• Economic Assumptions	-	-	0.053	-	0.053

Change Summary Explanation

The increase of $26.000 million in FY 2025 consists of the following internal realignments within OUSD(R&E):
+$5.720 million from PE 0603142D8Z
+$4.850 million from PE 0603330D8Z
+$6.330 million from PE 0604011D8Z
+$4.550 million from PE 0604294D8Z
+$4.550 million from PE 0605294D8Z.

Funding increase of $0.053 million for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603379D8Z / *Advanced Technical Int egration*	Project (Number/Name) 801 / *Information Technology Integration*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
801: *Information Technology Integration*	0.000	0.000	11.000	26.053	-	26.053	20.051	16.049	10.050	7.051	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Classified details provided upon request.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Information Technology Integration	-	11.000	26.053
Description: Information is classified ***FY 2024 Plans:*** Information is classified. ***FY 2025 Plans:*** Information is classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Information is classified			
Accomplishments/Planned Programs Subtotals	-	11.000	26.053

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603527D8Z / *Retract Larch*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	76.729	57.401	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
527: *Retract Larch*	-	76.729	57.401	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

Classified.

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Deputy Chief Technology Officer for Science and Technology (DCTO(S&T)) within the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)).

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	79.493	57.401	55.039	-	55.039
Current President's Budget	76.729	57.401	0.000	-	0.000
Total Adjustments	-2.764	0.000	-55.039	-	-55.039
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.756	-			
• Program Adjustments	-0.008	-	-55.039	-	-55.039

Change Summary Explanation

Funding in this program has been realigned as follows:
$10.000 million to PE 0603945D8Z to support Australia, the United Kingdom, and the United States (AUKUS) mission requirements
$32.000 million to PE 0603945D8Z to support international engagement and other operational requirements
$11.000 million to PE 0603945D8Z to support International S&T Engagement mission requirements
$1.500 million to PE 0605790D8Z to support Small Business Innovation Research (SBIR)/ Small Business Technology Transfer (STTR) Challenge Admin
$0.184 million to PE 0606300D8Z to support Defense Science Board (DSB) directed study requirements

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603527D8Z / *Retract Larch*

$0.355 million to PE 0603000D8Z to support Enhanced Munitions Advanced Technology

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603527D8Z / *Retract Larch*	Project (Number/Name) 527 / *Retract Larch*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
527: *Retract Larch*	-	76.729	57.401	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Deputy Chief Technology Officer for Science and Technology (DCTO(S&T)) within the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Retarct Larch	76.729	57.401	-
Description: Information is classified. ***FY 2024 Plans:*** Information is classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** $10.000 million realigned to PE 0603945D8Z to support Australia, the United Kingdom, and the United States (AUKUS) mission requirements. $32.000 million realigned to PE 0603945D8Z to support international engagement and other operational requirements. $11.000 million realigned to PE 0603945D8Z to support International S&T Engagement mission requirements. $1.500 million realigned to PE 0605790D8Z to support Small Business Innovation Research (SBIR)/ Small Business Technology Transfer (STTR) Challenge Admin. $0.184 million realigned to PE 0606300D8Z to support Defense Science Board (DSB) directed study requirements. $0.355 million realigned to PE 0603000D8Z to support Enhanced Munitions Advanced Technology.			
Accomplishments/Planned Programs Subtotals	76.729	57.401	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603618D8Z / *Joint Electronic Advanced Technology*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	32.483	23.289	19.793	20.188	-	20.188	20.638	21.068	21.528	21.958	Continuing	Continuing
245: *EW Enterprise Exploration and Innovation*	32.483	23.289	19.793	20.188	-	20.188	20.638	21.068	21.528	21.958	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Electromagnetic Operating Environment (EMOE) spans the terrestrial and space domains. It is the largest and most complex warfighting environment because it is universally pervasive, largely unseen, and can only be perceived through the use of advanced electronic technologies. Understanding and addressing warfighting challenges in the EMOE is essential to all military operations because it is through the use of Electromagnetic Spectrum (EMS) technologies that we perceive operational realities - the state and disposition of all military and nonmilitary forces and groups within operational environments - and coordinate all actions of our military forces. And it is through Electromagnetic Spectrum Operations (EMSO) that adversarial use of the EMOE can be impacted and potentially denied.

EMS-enabled cyber capabilities have linked the cyber and EMOE domains in such a way that the two domains often enable each other. Independently, and sometimes in concert with each other, they will be used to deliver or enable non-kinetic effects. It is important that the two domains be considered in terms of their many potential synergies and not in isolation of one another. Cyberspace and the EMOE can and will overlap in operationally significant ways.

Adversary radars are evolving from fixed analog systems to programmable digital variants with agile waveforms and unknown behaviors making preprogrammed electronic countermeasure less effective. Cognitive, adaptive, and passive technologies figure prominently. Foreign developments include new generations of challenging threats ranging from small, unmanned air systems and easily transportable Man-Portable Air Defense Systems (MANPADS) to dedicated anti-access area denial (A2/AD) military systems including integrated air defense systems and increasingly capable cruise and ballistic missiles that have incorporated the most advanced sensors, communication and electromagnetic warfare (EW) technologies. Non-kinetic exploits against the Command and Control (C2) networks in the cyber domain or at an EMS/cyber interface are also relevant.

The Joint Electromagnetic Advanced Technology (JEAT) Program was established to address these challenges through efforts designed to substantially accelerate the development and maturing of innovative technologies to (1) address new EW and EW/Cyber warfighting challenges and (2) provide new, leap ahead EMSO warfighting capabilities to ensure U.S. warfighters will always have decisive EW and EW/Cyber overmatch capabilities. The JEAT program specifically focuses on EW and EW/Cyber-related technologies that fall outside the Services' purviews or are not being developed rapidly enough.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603618D8Z *I Joint Electronic Advanced Technology*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	24.155	19.793	20.146	-	20.146
Current President's Budget	23.289	19.793	20.188	-	20.188
Total Adjustments	-0.866	0.000	0.042	-	0.042
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.866	-			
• Program Adjustment	-	-	0.042	-	0.042

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 245: *EW Enterprise Exploration and Innovation*		
Congressional Add: *Photonically Distributed Antenna System*	5.000	-
Congressional Add Subtotals for Project: 245	5.000	-
Congressional Add Totals for all Projects	5.000	-

Change Summary Explanation

A reduction of -$0.204 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.

Funding increase of $0.042 million for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603618D8Z / *Joint Electronic Advanced Technology*				Project (Number/Name) 245 / *EW Enterprise Exploration and Innovation*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
245: *EW Enterprise Exploration and Innovation*	32.483	23.289	19.793	20.188	-	20.188	20.638	21.068	21.528	21.958	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Electronic Warfare (EW) Exploration and Innovation (E&I) research efforts focus on the Electromagnetic Spectrum Potations (EMSO) capabilities of electronic warfare (EW), sensing, communications; cyber capabilities, and the delivery platforms that are associated with them. The scope of the EW E&I research efforts is from a joint, multi-domain perspective over the broad range of potential non-kinetic effects. The non-kinetic effects can overlap into the Electro-Optical and Infrared (EO/IR) phenomenologies and potentially, integration with directed energy subsystems.

New EW-related and EW/Cyber-related technologies are identified relative to current and projected EMSO challenges informed by the most current threat intelligence and from a joint and multi-domain perspective. Service operational perspectives are obtained through participation or facilitation of joint Communities of Interest (COIs). Potential solutions and technological synergies are explored through interaction with the research and practitioner communities. Considerable efforts are expended to avoid the potential for redundant efforts.

The Joint Electronic Advanced Technology program element (JEAT PE) supports large-scale, operationally-relevant scenario driven multi-domain experimentation events. The purpose of the events is to observe and highlight the most current and promising capabilities available – or under development by- the commercial, academic, federal, and defense sectors of the U.S. and select international partners. The experiments are conducted in an operationally relevant Electromagnetic Operating Environment (EMOE) with relevant blue, red and grey spectrum dependent systems such as radars, EW systems, decoys, communication devices and networks as well as cyber-dependent systems. The experiments provide the Science and Technology (S&T) and research communities the opportunity to meet with Department of Defense (DoD) experts and refine their technologies on a test-fix-test basis. The experiments allow the system developers to prepare for technology transition- either to a service or to a successive stage of DoD sponsored experimentation such as the Rapid Defense Experimentation Reserve (RDER) program. Typically, the Technology Readiness level (TRL) is advanced which improves commercial viability and the potential for transition. The experiment also offers a venue to demonstrate capabilities to potential transition partners.

Technologies enabling and facilitating electromagnetic attack (EA), Radio Frequency (RF) penetration of cyber systems, electromagnetic protection (EP), and electromagnetic support (ES) are covered. Technological advancements in materials, miniaturization, improved size, weight, power and cost (SWAP-C) and cognitive systems are considered, as are technologies that will allow for sensing and/or non-kinetic effects in denied areas or that bring computational capabilities to the tactical edge.

EW E&I efforts also seek to accelerate the development of non-traditional EMS sensing and ultra-wideband (UWB) approaches (greater than a decade of frequency) to enable continuous (RF) surveillance and distributed phase synchronous RF sensing. Photonic applications to signal distribution and processing are being explored. The EW E&I efforts are considered holistically in the context of the EMS complete from low frequency RF through the Info Red (IR) and photonic bands. EW E&I

research products are explored and developed in state-of-the-art laboratories and validated side-by-side with numerous competing technologies and systems from the Services, industry, academia, and national laboratories in live/virtual/constructive (LVC) experimentation environments and in complex field experimentation events under real-world conditions. This approach significantly accelerates the identification and development of the most effective EW technologies while concurrently reducing developmental costs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: EW Enterprise Exploration and Innovation (EW E&I)	18.289	19.793	20.188

Description: EW E&I research efforts identify, explore and accelerate the maturation and demonstration of new EW- and EW/Cyber-related technologies. Current EW E&I initiatives research thrusts include Passive Sensor Detection and Defeat (PSDD), Platform Self-Protection (PS-P), RF/Photonic applications, EW Technology Enablers (EW Tech), EW/Cyber Interface (EWCI) and EW Collaboration and Cognizance capabilities.

Passive Sensor Detection and Defeat (PSDD): Modern integrated air defense systems (IADS) employ a variety of radar sensing technologies to detect, classify, track, target and engage adversary aircraft. Classic IADS radars are active and emit RF radiation and collect the component of their radiation that reflects off of their targets. Radar Warning Receivers (RWRs) can readily detect the radiation of active radars and pilots can take mitigating measures to avoid potential threats.

Platform Self-Protection (PS-P): A wide variety of RF and Electrical Optical (EO) technologies are employed by modern militaries to detect, track, and engage attacking military systems. RF sensor systems including IADS radars, radars on ships, aircraft, ground, and naval vessels, and seekers on ballistic, cruise, air-to-air, surface-to-air missile are used to detect and provide targeting and engagement solutions to counter adversarial military systems. EO systems have been incorporated into missile seekers and are associated with high energy laser engagement systems for the same reasons. To ensure successful U.S. military actions, technologies that protect U.S. platforms and facilities against these new generations of more capable RF and EO detection/targeting/engagement sensors and seekers are essential. This thrust identifies, explores, and accelerates the maturation and demonstration of new non-kinetic approaches and technologies to counter adversarial advanced Radio Frequency (RF) and EO sensor and seeker threats. To begin identifying the most significant developmental opportunities, Joint Electronic Advanced Technology issued a Request for Information (RFI) call in FY 2022.

Electromagnetic Warfare Technology Enablers (EW Tech): Significant advances in materials, electronics (including photonics, plasmonics, spintronics, magnetronics, quantum technology, etc.) in the context of RF and communications sciences, optical and laser sciences, and information and computational sciences are enabling new generations of extremely powerful applications in a wide variety of fields. For example, artificial intelligence and machine learning (AI/ML) technologies have great relevance in EMSO. They can be used to enhance signal classification accuracy, determine optimal non-kinetic effects through adaptive waveform selection, enhance data fusion of very large datasets, control autonomous systems and make optimal use of dynamic spectrum access capabilities. In order to maintain capability and function of spectrum-dependent systems within the EMOE,

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603618D8Z / *Joint Electronic Advanced Technology*	**Project (Number/Name)** 245 / *EW Enterprise Exploration and Innovation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
U.S. Forces need to be able to rely on AI/ML or cognitive systems to respond as fast or faster than threat cognitive and adaptive systems can decide or maneuver spectrally within the EMOE. EW Cyber Interface (EWCI): The ability to impact system logic through utilizing EW and other RF systems provides powerful new options for EW application. EWCI research efforts identify, explore, and accelerate the maturation and demonstration of new EW/Cyber-related technologies. Significant advances in the application of digital EW have resulted in new generations of threat systems that are challenging the U.S.'s traditional dominance in these areas. As Internet of Things (IoT) technologies become more widely adopted, in particular, for networked sensing systems, the technology space shared by RF and cyber will gain importance. EW E&I efforts address emerging cyber-enabled threat systems and work towards developing new technologies and approaches that will ensure that all relevant avenues of attack, sensing or protection are considered and potentially exploited on behalf U.S. warfighters. EW E&I efforts specifically focus on areas where Service investments are lagging to accelerate the development and transition of multi-Service multi-mission EW technologies. EW E&I thrusts include Passive Sensor Detection and Defeat, Platform Self-Protection, RF/Photonic applications, EW Technology Enablers, EW/Cyber Interface (EWCI), and EW Collaboration and Cognizance capabilities. ***FY 2024 Plans:*** Passive Sensor Detection and Defeat (PSDD): • SILENT SWARM 24 (SS-24): Complete development and planning for the SS-24 field experimentation venue and conduct SS-24. SS-24 is a Naval Surface Weapons Center (NSWC) Crane led experimentation event focusing on small unmanned and semi-autonomous systems with spectrum related capabilities. Specific emphasis is being placed on the evaluation of technologies for enhanced sensing, precision navigation and timing (PNT), delivery and resilience to non-kinetic effects, autonomy and EW-enabled cyber operations for both autonomous and semi-autonomous operations in SS-24. Early state implications to Concepts of Operations (CONOPS), TTPs, and other operational considerations are often uncovered through these experimentation events. SS-24 will highlight Gray Zone operations that can include cyber and non-kinetic effects. Government and industry technology inputs will be solicited for event participation. SS-24 builds upon approaches and lessons learned from previous events and scenarios to produce threat representative architectures for red threat laydowns along with considerations for blue sensor integration. The date and location of SS-24 has yet to be determined. The potential for holding the event at the facilities of one of our AUKUS partners is under consideration.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603618D8Z / *Joint Electronic Advanced Technology*	**Project (Number/Name)** 245 / *EW Enterprise Exploration and Innovation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• SILENT SWARM 23 (SS-23): Complete assessment and reports for SS-23 and begin planning and development of the SS-24 field experimentation venue. Platform Self-Protection (PS-P): • Joint Aircraft Survivability (JAS) Study: Over the past decade, significant advances in optical sensors, processing, microelectronics, and systems integration have enabled new generations of extremely capable man-portable air defense system (MANPADS) and air-to-air (A2A) missiles to be developed. While U.S. countermeasures (CMs) to these classes of threats have advanced, foreign MANPADS and A2A missiles still pose significant threats to U.S. aircraft. The JAS study brings together an alliance of experts that span the Services and includes participation from industry, academia and government laboratories. This effort is expected to address historically ongoing collaboration issues and ultimately re-baseline Department Infrared Countermeasures (IRCM) development efforts. Electromagnetic Warfare Technology Enablers (EW Tech): • JEAT will continue to explore cutting edge Electro Magnetic Warfare (EW) Technology enablers to advance department spectrum superiority objectives. Outreach will continue with industry, academia, and government and service laboratories. EW Cyber Interface (EWCI): • Continue Electronic warfare & Cyber (EW&C) efforts to find synergistic relationships between cyber and Electronic warfare (EW), including EW-enabled cyber effects and non-kinetic approaches. • EW Collaboration and Cognizance (EW C&C): Several hundred million dollars are spent each year to develop better EW and EW/Cyber capabilities for U.S. warfighters. EW C&C efforts supporting the Office of the Under Secretary of Defense (Research and Engineering), EW and Countermeasures (OUSD(R&E),EW&C) facilitate greater collaboration across these initiatives through work with planners and developers across the Services, National Laboratories, Industry, academia, and international defense partners. Participation in the EW Community of Interest facilitates these efforts and provides insights for decision-makers within OSD and the Services and the EW Executive Committee. EW C&C efforts also enable the identification and development of collaboration opportunities. ***FY 2025 Plans:*** Passive Sensor Detection and Defeat (PSDD):			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603618D8Z / *Joint Electronic Advanced Technology*	**Project (Number/Name)** 245 / *EW Enterprise Exploration and Innovation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• SILENT SWARM 24 (SS-24): Complete assessment and reports for SS-24. • SILENT SWARM 25 (SS-25): Begin planning and development of the SS-25 field experimentation venue. Platform Self-Protection (PS-P): • Joint Aircraft Survivability-Electro-optical/Infrared (JAS-EO/IR) Study. Investigation into EO & IR countermeasures and protections. Electronic warfare Cyber Interface (EWCI): • Continue Electronic warfare & Cyber (EW&C) efforts to find synergistic relationships between cyber and Electronic warfare (EW), including EW-enabled cyber effects non-kinetic approaches. • EW Collaboration and Coordination (EW C&C): Continue OUSD(R&E) Electronic warfare & Cyber (EW&C) work to guide, shepherd and oversee all EW and EW/Cyber technology development across DOD. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2025 increase of $0.557 million will be used to fund additional studies needed to complete Silent Swarm 24 (SS-24) and assess new capabilities related to Photonically distributed antenna System (PDAS), Platform Self-Protection (PS-P), Joint Aircraft Survivability-Electro-optical/Infrared (JAS-EO/IR) Study, and Electronic warfare Cyber Interface (EWCI) capabilities.			
Accomplishments/Planned Programs Subtotals	18.289	19.793	20.188

	FY 2023	FY 2024
Congressional Add: Photonically Distributed Antenna System	5.000	-
FY 2023 Accomplishments: The $5M congressional plus-up will fund research within Distributed Antenna Systems and focus on: Aperture Building – A minimum of 3 RF photonic aperture will be built for both RX and TX based on technology available at start of effort. Develop Distributed Aperture Synthesis Models– Develop numerical models to predict performance of aperture synthesis for a range of configurations and potential applications.		

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603618D8Z / *Joint Electronic Advanced Technology*	**Project (Number/Name)** 245 / *EW Enterprise Exploration and Innovation*

	FY 2023	FY 2024
Evaluate Distributed Aperture Synthesis Techniques– Using laboratory hardware, experimentally validate fundamental aspects of the different aperture techniques. These results will be compared against modelled results to validate model performance. Aperture Synthesis Laboratory Measurements– Perform laboratory experiments to demonstrate and quantify the utility of synthesized apertures. Field Demonstration– Develop a field demonstration plan to prove the utility of the distributed aperture approach for the applications identified over the course of the effort. Program Documentation and Final Report– The results will be documented in a final presentation and report, detailing findings of the investigation and providing recommendations for further paths to transition technology.		
Congressional Adds Subtotals	5.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603662D8Z / *Networked Communications Capability*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	8.611	3.011	11.197	5.234	-	5.234	6.303	7.362	8.427	8.598	Continuing	Continuing
663: *Networked Communications Analysis*	8.611	3.011	11.197	5.234	-	5.234	6.303	7.362	8.427	8.598	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Networked Communications Capability (NCC) Program Element (PE) plays a vital role in supporting the Department of Defense (DoD) and Defense Industrial Base (DIB) ecosystem. NCC focuses on maturing and demonstrating technologies that foster interoperable, resilient, and capable strategic and Joint Force communications capabilities. Given the critical reliance of DoD missions on command, control, and communications (C3) infrastructure, the NCC PE addresses challenges faced by the DoD's existing C3 infrastructure, including internal system-centric design approaches, as opposed to network- and data-centric ones, and external threats from aggressive adversary actions. The integration of both DoD and commercial embedded, virtualized, and cloud-hosted hybrid systems and networks underscores the increasing importance of the DoD's ability to rapidly reconfigure and reconstitute this infrastructure. Ultimately, the NCC PE envisions C3 that is accessible for anyone, anywhere, anytime, and through any environment.

The NCC PE strategy employs secure and rapidly reconfigurable software-defined/hardware-supported solutions across the layers of the DoD communications stack (physical, network, information, and application layers). The technology integrates these layers to establish a highly agile, adaptable, and resilient C3 infrastructure. This approach ensures the DoD's ability to maintain critical communications in diverse mission domains such as terrestrial, maritime, air, space, and cyberspace. Additionally, it operates effectively in degraded, contested, or denied environments, supporting both tactical edge and strategic contexts. Building upon previous work with Software Defined Radios (SDRs), the NCC PE utilizes adaptive methods to dynamically analyze the operating environment. This includes considering parameter changes within individual waveforms and switching between high-data rate, low probability of detection techniques, and leveraging tunable waveforms for C3 across various scenarios. The integration of Software Defined Network (SDN) protocols facilitates routing the right information to the right users at the optimal speed and quality, aligning with the requirements of diverse warfighting missions. These advancements will leverage commercially available software and hardware where possible.

The NCC PE works in collaboration with the Joint Tactical Networking Center (JTNC) and the Joint Interoperability Test Command (JITC) in collaborative partnership to advocate for the proper testing, evaluation, verification and validation, and certification of all relevant SDR (inclusive of the waveforms) and SDN solutions from DIB partners for the purpose of ensuring enduring interoperability / compatibility, resiliency, and capability advancement for the positive benefit of US DoD warfighters and as well those of Allied Nations.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603662D8Z *I Networked Communications Capability*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	3.125	11.197	5.276	-	5.276
Current President's Budget	3.011	11.197	5.234	-	5.234
Total Adjustments	-0.114	0.000	-0.042	-	-0.042
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.114	-			
• Program Adjustments - Overall DoD Reduction	-	-	-0.053	-	-0.053
• Economic Assumptions	-	-	0.011	-	0.011

Change Summary Explanation

FY 2024 NCC PE had an increase of ~$7.000M to assist in supporting the Integrated Broadcast System Demo (IBS MX Demo) -- the effort was directed by the Deputy Secretary of Defense to assist with continued NCC capabilities and is to be completed by the end of FY 2024.

FY 2025 PB Program Adjustments -- A reduction of $0.053 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact.
FY 2025 PB Program Adjustments -- Funding increase of $0.011 million for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603662D8Z / *Networked Communications Capability*	Project (Number/Name) 663 / *Networked Communications Analysis*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
663: *Networked Communications Analysis*	8.611	3.011	11.197	5.234	-	5.234	6.303	7.362	8.427	8.598	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Threats to communication systems emanate from a variety of sources, encompassing electromagnetic, cyber, and kinetic elements, among others. The central objective of research and development in network communications is to guide the Services, partners, and industry towards the creation of fully networked and integrated capabilities that exhibit interoperability, resilience, and security. This involves the strategic identification and acceleration of critical technologies, leading to their transition to both strategic and tactical forces. The ultimate goal is to ensure that C3 systems are trusted, accessible, and reliable anywhere, anytime, and under any conditions for tactical to strategic missions, thereby enhancing the lethality of the warfighting force. In the face of peer aggressors armed with advanced kinetic and non-kinetic threats, the imperative for trusted and reliable C3 becomes even more pronounced. This capability is viewed not only as a critical deterrence measure but also as essential for providing a decisive and lethal response when required, spanning tactical to strategic missions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: NCC	3.011	11.197	5.234
Description: Title: Integrated Network System of Systems (INSS) Critical Technology Research and Development Portfolio Analysis ($1.904) Description: Provides technical leadership and oversight, establishes strategic priorities, and issues guidance relating to the supervision of all INSS related programs and activities across DoD. Title: Integrated Broadcast System (IBS) Operating over MUOS ULX Demonstration ($0.0) Description: Results of Deputy Secretary of Defense directed FY 2024 IBS Common Waveform demonstration and report to Cost Assessment and Program Evaluation (CAPE). Demonstration and Project completion in FY 2024. Title: Accelerated Networked C3 Technologies Research and Development. ($3.319) Description: Identify and accelerate rapidly reconfigurable software-defined and hardware-supported solutions across each of the layers of a given DoD communications stack (e.g. physical, network, information, and application layers) and technology that fuses the layers of the stack to provide a truly agile, adaptable, and resilient C3 infrastructure. FY 2023 Accomplishments: Software and hardware developments were successful in demonstrating instrumented performance within existing software elements, particularly information services. These developments showcased effective interaction between elements in the cloud			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603662D8Z / *Networked Communications Capability*	**Project (Number/Name)** 663 / *Networked Communications Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
environment and exhibited flexibility across various communications protocols. However, the gains made in hardware were found to be prohibitively expensive and impractical for the Army's transition of X-band capability. In response to this, a more practical and cost-effective UHF capability, aligning with the Army's preferences, is currently in the planning stages and is slated for demonstration in FY 3024. The subsequent transition of the UHF capability is anticipated. Notable accomplishments in FY 2023 also encompassed the successful transition of Universal Command and Control (UC2) to the Test Resource and Management Center (TRMC), preparations for FY 2024 demonstration of the IBS MUOS ULX capability, and planning for a Tactical Adaptive Modem (TAM) supporting Resilient Free Space Optical (FSO). Furthermore, collaborations with Service's tactical networking capability efforts generated opportunity for acceleration of a joint networking optimization demonstration, leveraging the Rapid Defense Experimentation Reserve initiative set for FY 2025.			
FY 2024 Plans: Software Development: - Incorporate networking features at both enterprise and tactical edge layer Hardware Development: - Integrate software and firmware in high speed spatially diverse embedded device Modeling: - Model interactions between core network and edge networking interface			
FY 2025 Plans: Continues funding for INSS Critical Technology Research and Development Portfolio Analysis and Accelerated Networked C3 Technology Research and Development, inclusive of the following innovation opportunity initiatives: • Support for experimentation and coalition demonstration towards transitioning multi-domain TAM/FSO, LPI/LPD waveforms, SDR and SDN (wrap up to field FY 2024 work with hook to support potential Congressional ask to field FSO capability) • Work with Combatant Commands, Services, and Agencies (CSAs) to identify minimum viable standards necessary for automatic transport maneuverability enabling ubiquitous communication • Support to CSA programs and technology development to rapidly incorporation necessary technology changes to meet necessary standards			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603662D8Z / *Networked Communications Capability*	**Project (Number/Name)** 663 / *Networked Communications Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• To accelerate fielding of critical INSS C3 technologies, NCC PE will identify and champion RDT&E efforts of promising enterprise S&T prototype initiatives from CSA labs and industry partner Independent research and development (IRAD) projects with high potential to transition in 1–3 years ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to the completed Deputy Secretary of Defense directed IBS Demo in FY 2024 and returned to NCC PE core baseline funding profile. Additional decreases due to economic inflation and FY 2025 PB programmatic adjustment to meet DoD overall funding reductions.			
Accomplishments/Planned Programs Subtotals	3.011	11.197	5.234

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The NCC PE is working together the DoD's Services/Agencies to integrate advanced SDR and SDN technologies into existing communications infrastructure within both tactical edge and strategic enterprise-level contexts. Interoperable, resilient, and capable C3 infrastructure is critical to addressing current and future threats to DoD warfighting operations, while modernizing the Joint Force in an affordable manner.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603669D8Z / *Microelectronics Commons*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	269.256	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
829: *Microelectronics Research Maturation – Prototyping*	0.000	269.256	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

Note

New Start (Y/N): No

FY 2023 funding of $269.256 million was transferred from the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Defense Fund to the FY 2023 Research, Development, Test and Evaluation, Defense-Wide appropriation for proper execution. The funds were appropriated by, and are transferred using special transfer authority provided by, section 102(b) of the CHIPS Act of 2022, division A of Public Law 117–167.

A. Mission Description and Budget Item Justification

This Program Element supports the Department's initiatives to Build Sustainable and Long-Term Advantage, Defend the Homeland, and Deter Aggression.

The Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) is executing the Microelectronics Commons (the Commons) activity pursuant to the Fiscal Year (FY) 2021 National Defense Authorization Act (NDAA) (Pub. L. 116-283), including the CHIPS for America Act, and funded through the CHIPS for America Defense Fund established by the CHIPS Act of 2022. The FY 2021 NDAA legislation significantly emphasizes solutions that promote the domestic on-shoring of capabilities to address economic and technology security concerns. Under FY 2021 NDAA Sec. 9903(b), the DOD is directed to establish a National Network for Microelectronics Research and Development (NNMRD) to enable the laboratory-to-fabrication transition of microelectronics innovations in the United States and to expand the global leadership in microelectronics of the United States. Specifically, the DOD is addressing a component of the NNMRD, the Commons, through a public-private partnership consisting of regional innovation hubs distributed across the U.S. to foster a pipeline of innovative ideas and talent residing in, for example, university labs and small business R&D teams.

Background

U.S. technological dominance in microelectronics materials, processes, devices, and architectural designs can only be sustained through the development of a robust domestic innovation ecosystem that fosters the rapid development and transition of novel concepts into commercially viable manufacturing processes. The U.S. innovation ecosystem has long been the driver of our nation’s technology leadership throughout the world. U.S. R&D kick-started the enormous semiconductor industry and continues to lead the world in developing the next generation of disruptive technologies including new materials, devices, circuits, architectures, and design tools.

In recent years, the efficient domestic adoption of U.S. chip innovation has been threatened as emerging hardware technologies have become increasingly reliant on offshore sources for State of the Art (SOTA) manufacturing, prototyping, and investment. There are several significant hurdles that hardware startups face, including limited or expensive access to necessary facilities and design infrastructure, high costs of design intellectual property, limited expertise with hardware engineering, and

high costs of prototyping. As a result, the number of U.S. hardware startups has dropped significantly and foreign investment in U.S.-based technology startups has enabled offshore fabrication and maturation of emerging technologies.

To address these needs, OUSD(R&E) is standing up the Commons as a public private partnership, consisting of regional innovation hubs distributed across the U.S. to foster a pipeline of innovative ideas and talent residing in university labs and small business R&D teams. The partnership will provide resources for and access to specialized lab equipment, technical expertise, and connections to existing or upgraded prototyping facilities. Fabrication facilities (fabs) will help mature promising technologies and demonstrate the manufacturing and economic benefits of these innovations for dual-use application for defense and commercial sectors.

The Commons will focus on critical, on-shore prototyping to transition innovation from universities, start-ups, and small companies to fabrication facilities (lab-to-fab transition). Key features are:
• Creates and connects “Lab-to-Fab” testing/prototyping hubs to form a network focused on maturing emerging microelectronics technologies
• Provides broad access to these prototyping hubs, potentially by augmenting facilities and enabling access to facilities within local semiconductor companies or FFRDCs.
• Facilitates microelectronics education and training of students at local colleges and universities and grows a talent pipeline to bolster local semiconductor economies and contribute more broadly to the growth of a domestic semiconductor workforce.

This program element focuses on the technology development activities of the Commons, including staffing at Commons hub facilities, advanced technology development, and significant prototyping activity. In addition, it provides for the establishment, staffing, and operation of the Microelectronics Commons Consortium Manager (CM), the overall management of the Commons, and will support the required physical, digital, and human infrastructure of the hubs.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	269.256	0.000	0.000	-	0.000
Total Adjustments	269.256	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Programmatic transfer from DoD Appropriation 0403D	269.256	-	-	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603669D8Z / *Microelectronics Commons*

Change Summary Explanation

FY 2023 funding of $269.256 million was transferred from the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Defense Fund to the FY 2023 Research, Development, Test and Evaluation, Defense-Wide appropriation for proper execution. The funds were appropriated by, and are transferred using special transfer authority provided by, section 102(b) of the CHIPS Act of 2022, division A of Public Law 117–167.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603669D8Z / *Microelectronics Commons*	Project (Number/Name) 829 / *Microelectronics Research Maturation – Prototyping*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
829: *Microelectronics Research Maturation – Prototyping*	0.000	269.256	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

FY 2023 funding of $269.256 million was transferred from the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Defense Fund to the FY 2023 Research, Development, Test and Evaluation, Defense-Wide appropriation for proper execution. The funds were appropriated by, and are transferred using special transfer authority provided by, section 102(b) of the CHIPS Act of 2022, division A of Public Law 117–167.

A. Mission Description and Budget Item Justification

This project focuses on the advanced technology development activities of the Commons including prototyping of devices or components using new microelectronics materials, processes, device designs, and architectural designs. It will also enable the establishment and operation of a Commons Consortium Manager (CM), which will provide efficient coordination and administration of regional innovation hubs. The CM is tasked with operating the Commons network, in alignment with the OUSD(R&E) Commons vision to ensure DOD access to and benefit from resulting technologies. The project also supports the establishment of the Commons Hubs, which will be networks of regional capabilities organized in collaboration with the CM to address DOD and commercial needs and requirements. The Hubs may include existing facilities augmented to enhance intrinsic specializations in emerging areas of microelectronics. Each Hub will concentrate on one of six technical areas including: Secure Edge Computing, 5G/6G Technology, Artificial Intelligence Hardware, Quantum Technology, Electromagnetic Warfare, and Commercial Leap Ahead Technologies. Core Facilities (i.e., fabs) are integral parts of the Hubs network that will provide key fabrication capabilities that are required to demonstrate prototypes with the volume and characteristics required to ensure reduced risk for full manufacturing production. This effort includes workforce development activities through the Commons network through technology development and prototyping activities. Activities may span K-12, undergraduate, graduate and continuing education and may include, for example, establishment of PhD internships and post-doc training at Hub facilities and internships with Hub members. Additionally, it will develop training for the existing Commons workforce with potential for impact beyond the entities participating directly in the Commons Hubs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Microelectronics Research Maturation – Prototyping	269.256	0.000	0.000
Description: This effort focuses on the development and prototyping of promising new microelectronics materials, processes, devices, and architectural designs with potential DoD applications, development of these technologies, and operation of the CM. It will also support operation of regional Commons Hubs and initial selection and execution of Commons Projects in conjunction with activities funded by PEs 0602669D8Z and 0604669D8Z. This effort includes workforce development activities through the Commons network through technology development and prototyping activities. Activities may span K-12, undergraduate,			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603669D8Z / *Microelectronics Commons*	**Project (Number/Name)** 829 / *Microelectronics Research Maturation – Prototyping*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
graduate and continuing education and may include, for example, establishment of PhD internships and post-doc training at Hub facilities and internships with Hub members. Additionally, it will develop training for the existing Commons workforce with potential for impact beyond the entities participating directly in the Commons Hubs. ***FY 2024 Plans:*** • Select initial Commons Projects to be executed by the Hubs; advanced prototyping efforts for new microelectronics technologies with potential DOD or dual-use applications • Execution of Hubs – access to prototyping capabilities and development of the semiconductor talent pipeline. • Facilitate transition of novel concepts matured in a low-volume production environment into commercially viable high-volume manufacturing processes. ***FY 2025 Plans:*** • Select the FY 2025 Commons Projects to be executed by the Hubs; advanced prototyping efforts for new microelectronics technologies with potential DoD or dual-use applications • Execution of Hubs – access to prototyping capabilities and development of the semiconductor talent pipeline. • Continue execution of FY 2024 Commons Projects; advanced prototyping efforts for new microelectronics technologies with potential DoD or dual-use applications • Continue to facilitate transition of novel concepts matured in a low-volume production environment into commercially viable high-volume manufacturing processes. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** N/A			
Accomplishments/Planned Programs Subtotals	269.256	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603669D8Z / *Microelectronics Commons*	**Project (Number/Name)** 829 / *Microelectronics Research Maturation – Prototyping*

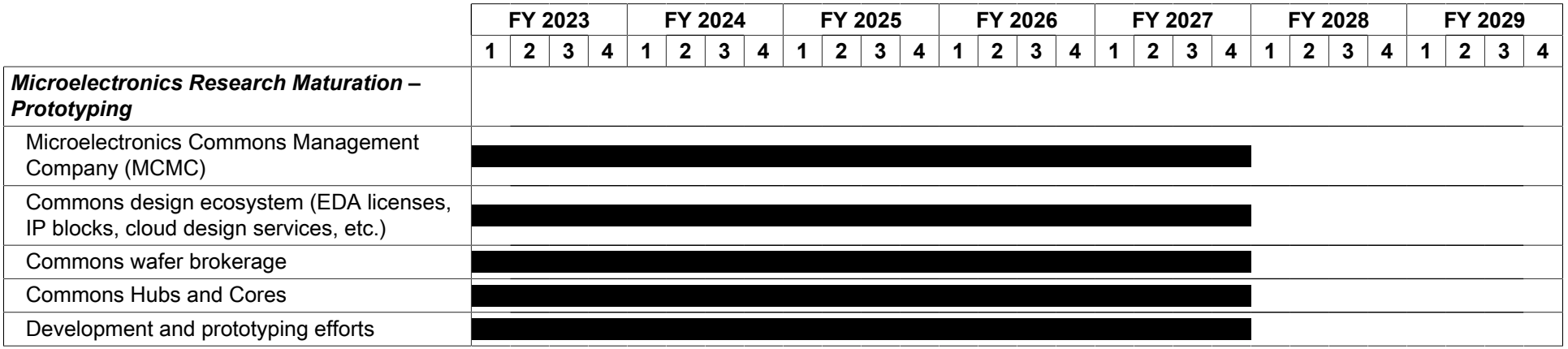

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603669D8Z / *Microelectronics Commons*	**Project (Number/Name)** 829 / *Microelectronics Research Maturation – Prototyping*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Microelectronics Research Maturation – Prototyping				
Microelectronics Commons Management Company (MCMC)	1	2023	4	2027
Commons design ecosystem (EDA licenses, IP blocks, cloud design services, etc.)	1	2023	4	2027
Commons wafer brokerage	1	2023	4	2027
Commons Hubs and Cores	1	2023	4	2027
Development and prototyping efforts	1	2023	4	2027

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603680D8Z *I Defense Wide Manufacturing Science and Technology Program*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	251.105	720.631	252.965	190.557	-	190.557	190.238	201.229	190.537	193.797	Continuing	Continuing
350: *Manufacturing Innovation Institutes*	146.958	522.669	112.728	138.878	-	138.878	135.656	143.922	133.833	136.123	Continuing	Continuing
351: *Manufacturing Education and Workforce Development*	3.993	9.813	5.101	5.739	-	5.739	5.953	6.243	6.177	6.282	Continuing	Continuing
680: *Manufacturing Science and Technology Program*	100.154	188.149	135.136	38.943	-	38.943	41.239	43.247	42.790	43.522	Continuing	Continuing
681: *Technology Industrial Base*	0.000	0.000	0.000	6.997	-	6.997	7.390	7.817	7.737	7.870	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build Sustainable and Long-Term Advantage and Build a Resilient Joint Force Defense Ecosystem.

The Defense-wide Manufacturing Science and Technology (DMS&T) program is the joint, defense-wide component of the Department of Defense (DoD) Manufacturing Technology (ManTech) Program directed in Title 10 U.S.C. Section 2521. DMS&T addresses joint, cross-cutting, and high-risk/high payoff technologies; manufacturing challenges within the DoD critical technology areas; and many of the recommendations in the Executive Order Report “Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States” September 2018.

The DMS&T program objective is to increase the speed at which innovation, inventions, and scientific discoveries are turned into equipment and capabilities through advances in manufacturing technologies and processes. The DMS&T program created and is sustaining a manufacturing innovation ecosystem via activities within four Program Element (PE) Project Codes: 350 - DoD Manufacturing Innovation Institutes (MIIs), 351 - Manufacturing Education and Workforce Development (M-EWD), 680 – Manufacturing Science and Technology Program (MSTP), and 681 – Technology Industrial Base (TIB).

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603680D8Z *I Defense Wide Manufacturing Science and Technology Program*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	747.442	252.965	163.036	-	163.036
Current President's Budget	720.631	252.965	190.557	-	190.557
Total Adjustments	-26.811	0.000	27.521	-	27.521
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-26.736	-			
• Program Adjustments	-0.075	-	20.922	-	20.922
• Economic Assumptions	-	-	0.384	-	0.384
• Internal Realignments	-	-	6.215	-	6.215

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 350: *Manufacturing Innovation Institutes*		
Congressional Add: *Direct Ink Writing of Advanced Thermoset Materials*	4.821	-
Congressional Add: *Additive Manufacturing Sustainability*	9.642	-
Congressional Add: *Flexible Hybrid Electronics*	5.785	-
Congressional Add: *Scalable Comprehensive Workforce Readiness Initiatives in Bioindustrial Manufacturing*	4.821	-
Congressional Add: *Bioindustrial Manufacturing Institutes*	289.269	-
Congressional Add: *Bioindustrial Manufacturing Matrix Development*	6.750	-
Congressional Add: *Multifunctional Bioindustrial Database Capability*	9.257	-
Congressional Add: *Operational Technology (OT) and Internet of Things (IoT) Asset Identification and Management*	4.821	-
Congressional Add: *Cybersecurity Maturity Model Certification (CMMC) Compliance for Cybersecurity in Manufacturing*	5.785	-
Congressional Add: *Supply Chain Adaptation of Artificial Intelligence (AI) and Robotics*	12.053	-
Congressional Add: *Difficult to Copy Manufacturing*	6.750	-
Congressional Add: *Next Generation Textiles (formerly "Domestic Textile Manufacturing")*	9.642	-
Congressional Add: *Data Analytics and Visualization System*	11.571	-
Congressional Add: *Hypersonics Enabling Manufacturing*	11.571	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603680D8Z *I Defense Wide Manufacturing Science and Technology Program*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Additive Manufacturing Training (formerly El Paso Makes Contract Support for El Paso Manufacturers)*	5.014	-
Congressional Add Subtotals for Project: 350	397.552	-
Project: 351: *Manufacturing Education and Workforce Development*		
Congressional Add: *Manufacturing Industrial 4.0 Training Program*	4.821	-
Congressional Add Subtotals for Project: 351	4.821	-
Project: 680: *Manufacturing Science and Technology Program*		
Congressional Add: *Advanced Composites for Hypersonics Aided by Digital Engineering (MACH-ADE)*	4.821	-
Congressional Add: *Automated Manufacturing Technologies for Very High Temperature Composites*	4.821	-
Congressional Add: *Custom Electrolytes for Military Lithium-Ion Batteries*	9.642	-
Congressional Add: *Engineered Resilient Systems*	9.642	-
Congressional Add: *Microelectromechanical Systems (MEMS) Mirror-Based LiDAR Sensor*	2.893	-
Congressional Add: *Advanced Materials and Materials Manufacturing Processes*	5.785	-
Congressional Add: *High Temperature Composite Material Manufacturing*	9.642	-
Congressional Add: *Large Scale Manufacturing (formerly High Performance Computing (HPC) Enabled Advanced Manufacturing)*	24.107	-
Congressional Add Subtotals for Project: 680	71.353	-
Congressional Add Totals for all Projects	473.726	-

Change Summary Explanation

Funding increase of $6.215 million in FY 2025 realigned from PE 0605797D8Z to support Technology Industrial Base. Funding increase of $39.900 million in FY 2025 added to support manufacturing integration. $18.978 million reduction in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.384 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	Project (Number/Name) 350 / *Manufacturing Innovation Institutes*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
350: *Manufacturing Innovation Institutes*	146.958	522.669	112.728	138.878	-	138.878	135.656	143.922	133.833	136.123	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports nine Department of Defense (DoD) led Manufacturing Innovation Institutes (MIIs) within the national Manufacturing USA network. The MIIs are public/private partnerships with members from industry, academia, and federal and state governments - including small and medium as well as large manufacturers - that address both commercial and defense manufacturing needs within specific, defense-relevant technology areas to mature manufacturing processes, build out a supporting ecosystem, and provide for manufacturing education and workforce development. The MIIs' flexible business models and strong focus on enabling highly collaborative research and development (R&D) are catalyzing important new organizational relationships across government, industry, and academia. MIIs bring together both traditional defense and non-traditional sectors to accelerate key innovation cycles, expand U.S. industrial capability, and assist in creating resilient supply chains that will support innovative defense products. Each MII consortium attracts partner funding to match DoD investments at a one-to-one ratio (or greater) and some offer state-of-the-art pilot facilities. MIIs receive active participation and support from the military departments and defense agencies and their members. The nine MII technology domain focus areas are: (1) America Makes (for additive manufacturing); (2) MxD (Manufacturing times Digital, for digital manufacturing, design and manufacturing cybersecurity); (3) LIFT (Lightweight Innovations For Tomorrow, for innovative processes to lightweight materials); (4) AIM Photonics (American Institute for Manufacturing Integrated Photonics, for photonic device manufacturing and packaging); (5) NextFlex (for flexible hybrid electronics manufacturing); (6) AFFOA (Advanced Functional Fabrics of America, for smart fibers and textiles); (7) BioFabUSA (for advanced regenerative tissue biofabrication); (8) ARM (Advanced Robotics Manufacturing, for smart collaborative robotics for manufacturing); and (9) BioMADE (for bioindustrial manufacturing of non-medical materials and products).

MII funding is focused on:
• Conducting pre-competitive applied research and development projects to reduce the cost, time, and technical uncertainty related to new manufacturing technologies and to improve existing technologies, processes, and products.
• Developing and implementing education, training, and workforce recruitment courses, materials, and programs.
• Developing innovative methodologies and practices for supply chain integration and introduction of new technologies into supply chains.
• Engaging with small and mid-sized manufacturers, including women and minority-owned manufacturing enterprises, and larger-sized manufacturing firms.

Each MII has a different model, with the following core tenets:
• Each MII is a public/private partnership with representatives from industry, academia, state and local governments, and the DoD that co-invest in world-leading technologies and capabilities.
• Each MII provides facilities to allow collaborative, precompetitive development of promising technologies and to promote the creation of stable and sustainable innovation ecosystems for advanced manufacturing.
• The partnership forming the MII must commit non-federal resources that equal or exceed the federal commitment.
• Each institute participates in the national Manufacturing USA network.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: America Makes (Additive Manufacturing)	26.095	20.004	20.049
Description: America Makes' mission is to accelerate the adoption of additive manufacturing (AM) in the United States industrial base. Additive manufacturing (i.e., 3D printing) is a process of joining materials to make objects from 3D model data, usually layer upon layer, as opposed to subtractive manufacturing methodologies such as traditional machining. Additive manufacturing benefits the DoD by enabling lifecycle cost savings and enhanced capabilities including: distributing supply chains to enable the right part in the right place at the right time; improving mission readiness by producing work aids for DoD depots; replacing long-lead time and out of production spares, and enhancing lethality through production of lighter weight and higher performing parts than could otherwise be achieved with traditional manufacturing. ***FY 2024 Plans:*** Expand application of additive manufacturing methods and standards to address critical defense advanced manufacturing requirements and expand the additive manufacturing workforce. Leverage lessons learned from the FY 2023 castings and forgings efforts. ***FY 2025 Plans:*** Expand application of additive manufacturing methods and standards to address critical defense advanced manufacturing requirements and expand the additive manufacturing workforce. Explore how Additive Manufacturing can be utilized to help meet the nations climate goals through lightweighting, distributed manufacturing, and manufacturing at the point of need. Fill previously identified technology gaps to continue to support the castings and forgings industrial supply base. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.045 million between FY 2024 and FY 2025 is the result of expanding the scope of the castings and forgings research project requirement in FY 2025 over FY 2024 plans.			
Title: MxD – Manufacturing times Digital (Digital Manufacturing, Design and Cybersecurity)	10.263	8.623	11.424
Description: MxD focuses on implementation of the Digital Thread; the unencumbered flow of data across the lifecycle of a manufactured product encompassing data from design, production, supply, sourcing, inventory, assembly, quality, maintenance, and sustainment. It includes analysis of data to reduce the time and cost of bringing new products to market. MxD eliminates barriers between design, manufacturing, and sustainment by using both product data and process data in a way that is seamless and transparent. ***FY 2024 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue projects to support the adoption and application of advanced digital and cybersecurity manufacturing solutions across the defense industrial base and grow the digital manufacturing workforce. ***FY 2025 Plans:*** Continue R&D projects to support the adoption and application of advanced digital and cybersecurity manufacturing solutions across the defense industrial base and grow the digital manufacturing workforce. MxD will expand efforts into digital and cybersecurity solutions for cast and forging supply chain. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $2.801 million between FY 2024 and FY 2025 reflects the addition of funding for cyber infrastructure to address castings and forgings supply chain projects and to address related readiness, posture, and logistics requirements.			
Title: LIFT – Lightweight Innovations for Tomorrow (Lightweight Innovations – materials and processes) ***Description:*** LIFT develops American manufacturing technology and talent at the intersection of materials research, manufacturing processes, and systems engineering. LIFT's technology pillars include Integrated Computational Materials Engineering (ICME), Computational Engineering, Agile and Smarter Manufacturing, Advanced alloy and Process Development, and Multi-materials Joining. In addition, LIFT is working across the education continuum to prepare the future advanced manufacturing workforce with the knowledge, skills, and abilities necessary to use the technologies emerging from the institute. The goal is to catalyze the development of an advanced lightweight materials, a U.S. supplier base, and a workforce to enable DoD Warfighter systems and benefit commercial applications. ***FY 2024 Plans:*** Continue advanced materials and materials manufacturing R&D and materials workforce development. Support defense, commercial, and dual-use technology development via specific activities including hypersonic materials manufacturing, lightweighting of defense and commercial systems/components, advanced materials development, and advanced fabrication and manufacturing methods. Sustain LIFT's Learning/Talent Development Lab, expand DEI, and continue workforce development projects while targeting K-12, university students, current workforce, and separating military personnel. ***FY 2025 Plans:*** Continue advanced materials and materials manufacturing R&D and workforce development efforts. Support defense, commercial, and dual-use technology development through strategic and technology roadmaps for the Integrated Computational Materials Engineering (ICME) and Computational Engineering, Advanced Materials and Process Development, Agile and Smarter Manufacturing, and Multi-material Joining technology pillars. Conduct member and institute led technology projects and maintain a collaborative ecosystem. Examples of specific activities include hypersonic materials, powder alloy, and cold spray development. Sustain LIFT's Learning/Talent development Lab, expanding DEI, and continue workforce development efforts targeting K-12, university and community college students, current workforce, and separating military personnel. LIFT will apply materials	10.619	8.942	11.744

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
development and processing expertise through Integrated Computational Materials Engineering and materials development to improve the casting and forging supply chain. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $2.802 million between FY 2024 and FY 2025 reflects addition of funding for Integrated Computational Materials Engineering (ICME) to address castings and forgings supply chain projects at LIFT and to address related readiness, posture, and logistics requirements.			
Title: AIM – American Institute for Manufacturing Photonics (Integrated Photonics Device Manufacturing and Packaging) ***Description:*** Integrated photonic circuit manufacturing advances the promise of unprecedented interconnection between electronics and photonics that will deliver world-class performance in speed, density, and power consumption. Photonics provides differentiating benefits for defense applications such as high-speed signal processing; electronic warfare; position, navigation, and timing; information transport and computation; sensing; imaging; and targeting. AIM Photonics has established an end-to-end U.S. 'ecosystem' for advancing domestic integrated photonics manufacturing, including access to a responsive integrated photonic circuit fabrication foundry. AIM Photonics provides the world's most accessible 300 mm silicon photonics multi-project wafer service, state-of-the-art process design, and a highly advanced test, assembly, and packaging (TAP), facility. ***FY 2024 Plans:*** Continue to advance integrated photonic circuit manufacturing R&D, photonic-microelectronics packaging solutions, and application design opportunities for the integrated photonics workforce. AIM will offer core capabilities including silicon photonics multi-project wafer runs, train new designers while seeking greater DEI, improve the use of its test, assembly, and packaging (TAP) facility, provide laser solutions to its members, advance low-loss platforms for sensing and quantum applications, and extend photonics-based climate change projects to strengthen the integrated photonic circuit ecosystem and workforce. ***FY 2025 Plans:*** Continue to develop and offer next-generation integrated photonic circuit fabrication and test, assembly, and packaging (TAP) capabilities to the U.S. ecosystem. Extend design and training opportunities to continue to grow the overall integrated photonic circuit ecosystem. Perform targeted work to mitigate climate change, improve the variety and performance of laser solutions, and expand accessibility to low-loss platforms for sensing and quantum applications. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $2.089 million between FY 2024 and FY 2025 reflects addition of funding to extend design and training opportunities and increase the test, assembly, and packaging (TAP) facility capabilities and to address related readiness, posture, and logistics requirements.	20.298	17.858	19.948
Title: NextFlex Manufacturing Innovation Institute (Flexible Hybrid Electronics Manufacturing)	11.185	9.659	11.704

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Flexible hybrid electronics manufacturing involves highly tailorable devices on non-traditional, compliant substrates that combine thinned components manufactured from traditional processes with components added via "printing" processes. NextFlex invests in prototyping and scale-up of manufacturing processes for high-speed pick-and-place, printed circuits, and hybrid fabrication to enable defense and commercial applications in wearable electronics, unattended sensors, integrated array antennas, medical devices, and soft robotics devices. NextFlex is also committed to continuous improvement in SWAPC (Size, Weight And Power plus Cost) for electronic systems. ***FY 2024 Plans:*** Continue to advance manufacturing methods for flexible hybrid electronics (FHE) to address defense critical technology areas and provide solutions to help grow the microelectronics workforce. NextFlex will adapt its roadmaps to improve manufacturing process reliability and performance standards, deliver DoD-relevant prototypes, expand FlexFactor education programs while leveraging diversity, equity, and inclusion (DEI), and continue pursuit of sustainable FHE to mitigate climate change. ***FY 2025 Plans:*** Expand advanced manufacturing for flexible hybrid electronics to align yield and reliability with standards and to meet critical technology areas and grow semiconductor workforce. NextFlex will address next roadmap gaps to deliver prototypes for DoD applications, improve flexible hybrid electronics manufacturing to refine standards, expand workforce programs supporting military industries, and conduct the next phase of climate mitigation projects to reduce printed circuit board waste and assist the domestic manufacturing base. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $2.045 million between FY 2024 and FY 2025 reflects addition of funding to expand workforce programs supporting and deliver additional prototypes for DoD applications and to address related readiness, posture, and logistics requirements.			
Title: Advanced Functional Fabrics of America (Smart Fibers and Textiles) (AFFOA)	8.357	7.074	9.108
Description: AFFOA accelerates transformation of the manufacture of traditional fibers, yarns, and textiles into highly sophisticated, integrated, and networked devices and systems. It is helping to convert the domestic textile industry into one differentiated by Intellectual Property (IP) and value-added technology. AFFOA mission outcomes will lead to highly functional fabrics that provide valuable services: fabrics that see, hear, sense, communicate, store and convert energy, regulate temperature, monitor health, and change color. AFFOA is translating these outcomes into new and improved textiles that benefit the warfighter as well as the commercial consumer. ***FY 2024 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue to improve manufacturing methods for highly functional fabrics that benefit the warfighter and expand training opportunities for an advanced fiber and textile manufacturing workforce. AFFOA will continue to enable DoD and DIB partners increased access to AFFOA's organic fabric prototyping and advanced textile system integration capabilities; cultivate membership supply chains to support DoD capability needs; develop strategic university education, internships, and regional vocational training while leveraging DEI; and conduct select clothing and textile fiber projects to mitigate climate change. ***FY 2025 Plans:*** Continue to improve manufacturing methods for highly functional fabrics that benefit the warfighter and expand training opportunities for an advanced fiber and textile manufacturing workforce. Continue to enable DoD and DIB partners' increased access to AFFOA's organic prototyping and advanced textile system integration capabilities to de-risk technologies and increase manufacturing readiness. Technology projects and ecosystem development will focus on manufacturing modernization through digital engineering, prototype manufacturing of Warfighter enhancement and protective systems, and developing and scaling of sustainable materials and processes. Maintain and grow the ecosystem and advanced fibers and fabric (AFF) supply chain to support DoD capability needs. Expand EWD programs through development of AFF manufacturing curriculum across the educational continuum, including workforce training, while leveraging DEI. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $2.034 million between FY 2024 and FY 2025 reflects addition of funding to expand EWD programs and increase prototyping capabilities and to address related readiness, posture, and logistics requirements.			
Title: BioFabUSA Manufacturing Innovation Institute (regenerative tissue manufacturing) ***Description:*** BioFabUSA advances state-of-the-art human tissue manufacturing innovations in cell and biomaterial processing, bioprinting, automation, and non-destructive testing technologies. BioFabUSA is establishing a collaboration to mature tissue-related technology across manufacturing readiness levels (MRL) 4-7, enabling post-delivery assurance of tissue identity, viability, function, and efficacy. This MII is assembling a diverse and currently fragmented collection of industry practices and institutional knowledge across many disciplines (e.g., cell biology, bioengineering, materials science, analytical chemistry, robotics, and quality assurance). ***FY 2024 Plans:*** Continue to improve manufacturing methods for tissue engineered medical products and expand certification and credentialing programs for the biomanufacturing workforce. BioFabUSA will add sensor and automation technologies to improve the manufacturing platform and fund technology, therapeutic development, and education and workforce development (EWD) projects. BioFabUSA will leverage DEI to expand the biomanufacturing workforce and accelerate emerging EWD certification and credentialing programs. ***FY 2025 Plans:***	10.472	10.077	12.136

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue to enhance manufacturing methods and capabilities for tissue engineered medical products and expand certification and credentialing programs for the biomedical manufacturing workforce. BioFabUSA will increase automation and data collection of manufacturing processes, allowing enhanced abilities to evaluate the safety and efficacy of tissue engineered medical products. BioFabUSA will increase engagements with the Food & Drug Administration (FDA) to speed the transition of critical medical technologies to the clinic and commercial marketplace. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $2.059 million between FY 2024 and FY 2025 reflects addition of funding to expand certification and credentialing programs and increase coordination with the Food & Drug Administration (FDA) and to address related readiness, posture, and logistics requirements.			
Title: Advanced Robotics Manufacturing (Smart Collaborative Robotics for Manufacturing)	4.739	8.991	12.289
Description: Improve U.S. manufacturing competitiveness through advancements in the smart collaborative robotics field. Technologies developed via Advanced Robotics Manufacturing (ARM) support advanced robotics capabilities to address DoD requirements and improve U.S. manufacturer competitiveness with robotics. ARM is focusing on technologies enabling human robot interaction, and perfecting robotic adaption, learning, manipulation, autonomy, mobility, and perception. ***FY 2024 Plans:*** Continue R&D investments in advanced robotics manufacturing that support defense critical technology areas and develop a competent robotics workforce. ARM will invest in technical projects to improve automated manufacturing capabilities and facilitate adoption by the organic and industrial base. ARM will also develop robotic competencies, credentialing, apprenticeships, and tools for the robotics manufacturing workforce while seeking to expand DEI. ***FY 2025 Plans:*** Continue R&D investments in advanced robotics and associated artificial intelligence (AI) technologies for manufacturing that support defense critical technology areas and develop/sustain a competent robotics workforce. Technology projects and ecosystem development will focus in the DoD modernization areas of AI, Autonomy, Hypersonics, and Space. Additional planned technology projects target implementation of advanced robotics for casting and forging, and energetics manufacturing for both the Defense Industrial Base (DIB) and the Organic Industrial Base (OIB). Education and workforce development projects will further enhance the roboticscareer.org virtual toolset, and conduct analytical studies to address the needs of the DIB and the OIB. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $3.298 million between FY 2024 and FY 2025 reflects the addition of funding for robotics and automation to address casting and forging supply projects, projects addressing automation for energetics manufacturing, and additional studies/ projects in workforce development for Organic Industrial Base (OIB) modernization activities related to advanced robotics			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
and artificial intelligence (AI) necessary competencies. The increase also addresses related readiness, posture, and logistics requirements.			
Title: BioMADE Manufacturing Innovation Institute ***Description:*** : The BioMADE MII promises to deliver a new class of manufacturing with domestic capabilities to manufacture critical resources with increased supply chain security. Bioindustrial manufacturing also has the potential to create entirely new classes of products with primary defense applications, such as chemicals and materials with advanced properties for use in austere environments. Bioindustrial manufacturing addresses defense priorities and offers commercial potential for innovations in food, agriculture, fuels, industrial chemicals, and other consumer products that will create new opportunities for U.S. manufacturers. ***FY 2024 Plans:*** Increase bioindustrial technical project calls to overcome scale-up, commercialization, and deployment challenges for bio-manufactured products. Continue maturing defense applicable biomanufactured products which could align with future distributed manufacturing enabled by modular bioindustrial and reusable (MEMBR) assets to prepare for the construction and operation of regional facilities to demonstrate bioindustrial solutions for defense critical products. ***FY 2025 Plans:*** Continue progress on infrastructure investments for bioindustrial manufacturing, conduct project calls to address bioindustrial technical challenges as well as workforce development and biosafety, biosecurity, sustainability, and social responsibility. Execute Bioindustrial Innovations to Mitigate Climate Change & Secure Critical Supply Chains and conduct Distributed Manufacturing. Enabled by Modular Bioindustrial & Reusable (MEMBR) Assets - Piloting, Analysis, and Challenge projects. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $8.694 million between FY 2024 and FY 2025 is for Distributed Manufacturing Enabled by Modular Bioindustrial & Reusable (MEMBR) Assets - Piloting, Analysis, and Challenge projects and .addresses related readiness, posture, and logistics requirements.	23.089	21.500	30.476
Accomplishments/Planned Programs Subtotals	125.117	112.728	138.878

	FY 2023	FY 2024
Congressional Add: Direct Ink Writing of Advanced Thermoset Materials	4.821	-
FY 2023 Accomplishments: America Makes partner JuggerBot 3D LLC, located in Youngstown Ohio, has developed an innovative industrial 3D printing solution with proprietary programming that incorporates a state-of-the-art ink extrusion method known as Direct Ink Write. This technology is uniquely capable of processing		

	FY 2023	FY 2024
advanced thermoset materials like epoxies, polyurethanes, polyesters, silicones, and can vary the printed part composition to suit the functional need of the design (e.g., softer sealing material on a hard cover). The program to be executed via the America Makes MII will focus on achieving an efficient and stable production with thermoset materials and equipment at scale, integrating automation to mitigate operator interference and enable smart manufacturing. By optimizing the process and materials for Direct Ink Write 3D printing, the project will facilitate a more streamlined process for transferring technology and knowledge to commercial users.		
Congressional Add: Additive Manufacturing Sustainability ***FY 2023 Accomplishments:*** The additive manufacturing ecosystem enabled by the America Makes Manufacturing Innovation Institute (MII) will lead a multi-phased effort to develop statistically relevant materials data sets for the top three materials which exhibit the greatest impact for aerospace, automotive, defense, energy and medical sectors. In addition, this ecosystem will address additive manufacturing process repeatability and product transferability leveraging a parallel multi-pronged approach.	9.642	-
Congressional Add: Flexible Hybrid Electronics ***FY 2023 Accomplishments:*** The NextFlex Manufacturing Innovation Institute (MII) will execute additional projects to enhance technology at the intersection of flexible hybrid electronics (FHE), semiconductor packaging, and electronics assembly. The projects will include increased support for the NextFlex Regional Nodes (including in New York and Massachusetts). NextFlex will share results and manufacturing know-how with the U.S. FHE ecosystem through its consortium activities, including transitioning manufacturing processes from developers and the NextFlex Technology Hub to U.S. manufacturers. To support workforce development, NextFlex will build FHE curriculum modules and execute hands-on workshops (in collaboration with university partners) targeted at training incumbent workers to accelerate adoption and deployment of the technology.	5.785	-
Congressional Add: Scalable Comprehensive Workforce Readiness Initiatives in Bioindustrial Manufacturing ***FY 2023 Accomplishments:*** Address the skilled technical labor required for a growing biomanufacturing industrial base by using a modular and scalable approach executable across multiple regions. It includes: (1) Design, development, and expansion of skilled technical workforce training programs in biomass, upstream, and downstream bioprocessing. These will capitalize on existing instructional facilities, resources, and capabilities of BioMADE members in target regions to enhance existing programs in upstream and downstream bioprocessing. Support instructional content creation, reagents, supplies, teaching, and support staff to create and assess instruction for technical education and programming in bioindustrial manufacturing. (2) Soldier to Scientist: Develop instructional modules covering bioprocessing topics such as extraction, fermentation, upstream, downstream, and instrumentation. (3) Community-to-Career tiered-mentoring in science and technology (S&T)	4.821	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

	FY 2023	FY 2024
for a resilient and sustainable workforce in bioindustrial manufacturing. Build a network of community-based organizations, educators, scientists, industry representatives, and other subject matter experts to guide science and technology-interested students towards careers in the bioindustrial manufacturing sector. Includes regional partners from the Engineering Biology Research Consortium and other stakeholders actively engaged in cross-disciplinary science, technology, engineering, and mathematics (STEM) education and mentoring. (4) Professional Development biomanufacturing training programs for workforce educators, incumbent, and adult learners. These efforts support equipment acquisition for training educators (train-the-trainer) for incumbent and adult learners. Instruction in the biomanufacturing lab will offer hands-on training and real-world exposure to operational procedures and technical skills development through retraining, retooling, and upskilling.		
Congressional Add: Bioindustrial Manufacturing Institutes	289.269	-
FY 2023 Accomplishments: The BioMADE Manufacturing Innovation Institute (MII) will initiate the development of a network of pilot-scale industrial biomanufacturing facilities to conduct research and development to improve the ability of the industrial base to assess, validate, and scale new, innovative bioindustrial manufacturing processes for the production of chemicals, materials, and other products necessary to support national security or secure fragile supply chains, thereby implementing Section 215 of the NDAA for FY 2023. Conduct an industry analysis to refine specific biomanufacturing infrastructure gaps (e.g., fermentation capacity, feedstock development, and downstream processing). Concurrently, establish multiple pilot-scale industrial biomanufacturing facilities across the United States to begin to resolve critical infrastructure shortages and to facilitate the transition from laboratory scale research to pilot-scale production of biomanufactured materials. Facilities will be available to the Department and the nation's bioindustrial manufacturing network – industry partners, their suppliers/customers, and the academic community – all with an eye towards hardening the defense industrial base, and further, catalyzing innovation and investment in this sector of the economy.		
Congressional Add: Bioindustrial Manufacturing Matrix Development	6.750	-
FY 2023 Accomplishments: Develop and pilot a bioindustrial product supply chain database and analysis system to enable BioMADE and its members to fully leverage domestic supply chains. The system portal will enable ad-hoc searches of a database representing the current and relevant capabilities, projects, and partners of all BioMADE members across local, state, and national scales. By enhancing the visibility of key capabilities within the ecosystem, the portal will facilitate collaborations between BioMADE members to strengthen bioindustrial manufacturing innovation and workforce development. Once BioMADE firmly establishes its value, this multi-sourced pilot portal can be enhanced with additional features including resiliency gap identification,		

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

	FY 2023	FY 2024
cybersecurity self-assessment, compliance tracking, and customized opportunity identification. Subsequently it could be expanded to the other eight DoD Manufacturing Innovation Institutes.		
Congressional Add: Multifunctional Bioindustrial Database Capability ***FY 2023 Accomplishments:*** Establish a secure, digital ecosystem for collaborative data exchange across the bioindustrial manufacturing community (industry, research and development labs, and DoD). The system will feature a flexible data core specialized to address the diverse data sharing, analysis, and search needs of the bioindustrial manufacturing community. Core database capabilities are (1) Secure data exchange (between industry, academia, and military service labs), (2) data warehousing (including chemical, biological, process data, and associated metadata), and (3) advanced analytics (artificial intelligence (AI) and machine learning (ML)), omics, biological and biomanufacturing models, techno-economic analysis, asset tracking, unit operation analysis, etc.). Phase 1 includes a functional data store with a secure application programming interface (API) to serve the diversity of data exchange and data storage needs expressed by the bioindustrial manufacturing community. Phase 2 establishes compute pipelines, automated data ingestion, user web interfaces, and analytical algorithms to produce a fully-featured data exchange solution for the industry. This enables International Organization for Standardization (ISO)-27001 certification to help foster adoption, and supports DoD and Service laboratory requirements for quality assured and sustainable access to a bioindustrial manufacturing ecosystem with capabilities to support critical national security needs.	9.257	-
Congressional Add: Operational Technology (OT) and Internet of Things (IoT) Asset Identification and Management ***FY 2023 Accomplishments:*** Operational Technology (OT) and Internet of Things (IoT) devices lack sufficiently rich fingerprint databases that can be used to support asset identification and management. While large databases exist to identify operating systems and even enumerate services running over Transmission Control Protocol/Internet Protocol. (TCP/IP), a common communications protocol, they do not offer the level of granularity needed to identify OT/IoT devices that may be running partial implementations of a TCP/IP stack or not even running an operating system. As OT and IoT environments proliferate, these assets may create a significant vulnerability to broader cyber attacks. The University of Tulsa, in cooperation with the Army Engineer Research and Development Center (ERDC), will develop a new hydro-electric testbed connected to the existing scaled electric power substation located the University of Tulsa's Critical Infrastructure Protection Lab to evaluate tools for asset identification in a combined electric power generation (new hydro-electric testbed) and distribution network (substation) environment over a wide range of use-cases. The project will investigate	4.821	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

	FY 2023	FY 2024
methods to detect, identify, and inventory components and services in a networked system and evaluate existing databases (e.g., nmap) to determine their accuracy in fingerprinting OT/IoT devices.		
Congressional Add: Cybersecurity Maturity Model Certification (CMMC) Compliance for Cybersecurity in Manufacturing ***FY 2023 Accomplishments:*** MxD, as the DoD-designated National Center for Cybersecurity in Manufacturing (NCCM), will create impactful, easy-to-acquire CMMC compliance resources to help small and medium-sized manufacturers (SMMs) achieve appropriate CMMC status, evaluate their current cyber posture by identifying opportunities to improve cyber hygiene, and provide appropriate tools to react to additional requirements from DoD and the Cyber Accreditation Body (formerly the CMMC-AB). MxD will provide a suite of resources for free to Small and Medium Manufacturers (SMMs) and Small and Medium Enterprises (SMEs) to help them comprehensively achieve and maintain all levels of CMMC compliance. MxD will work with the DoD, Department of Homeland Security, and Department of Commerce help SMMs and SMEs across the nation's industrial base to navigate cybersecurity compliance requirements.	5.785	-
Congressional Add: Supply Chain Adaptation of Artificial Intelligence (AI) and Robotics ***FY 2023 Accomplishments:*** Advanced Robotics for Manufacturing (ARM) Manufacturing Innovation Institute (MII), ARM members, and Carnegie Mellon University (CMU) will develop a new, core competency for identifying and extracting key data sets and developing in-depth, high quality, relevant abstractions of data across multiple robotics platforms that can be used as a service to advance the intelligence of machines. They will establish a Learning Laboratory in the Hazelwood Green Mill 19 facility operated by the CMU Manufacturing Futures Institute (MFI) and ARM. Catalyst Connection will work with project partners to establish the business model, equipment list, training programs, and communications and recruitment strategies for Small and Medium Manufacturers (SMMs) and their workers to take advantage of and utilize the learning lab. MFI and ARM will purchase and install equipment, hire staff to operate the learning laboratory, and provide trainers and related support.	12.053	-
Congressional Add: Difficult to Copy Manufacturing ***FY 2023 Accomplishments:*** Funds are being applied to projects to address manufacturing challenges across the supply chain including digital approaches to protect methods and improve processes at aging arsenals and depots; biomanufacturing projects to develop automated remote animal protein production workstreams and plan expansion of domestic bioindustrial manufacturing infrastructure; and application of additive manufacturing methods at larger scale to address Joint Additive Manufacturing Working Group priorities.	6.750	-
Congressional Add: Next Generation Textiles (formerly "Domestic Textile Manufacturing")	9.642	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

	FY 2023	FY 2024
FY 2023 Accomplishments: During the second year of the ETIF project, in FY 2023 AFFOA will prototype and field test fabric shelter systems and a warfighter ensemble kit with fabric-integrated power, data, and environmental sensors with demonstrated low radio frequency (RF) signatures. Members of the AFFOA ecosystem will prototype and field test underwater tether systems with embedded sensors (temperature, pressure, salinity) for improved undersea situational awareness in support of critical Navy missions. The third ETIF project activity for FY 2023 will identify the technical specification of other high-temperature materials applications, such as hypersonics, to access further cost savings and utility of silica fabric technology.		
Congressional Add: Data Analytics and Visualization System ***FY 2023 Accomplishments:*** The FY 2023 Data Analytics and Visualization System program is expanding on FY 2022 project goals. The program is executing in three research focus areas with an overall objective of developing an automated intelligence-based quality assurance framework for advanced and additive manufacturing of metal components, new innovative high performance data analytics technologies to discover knowledge and gain insight into advanced manufacturing equipment performance and demonstrating those technologies for predicting future performance of advanced manufacturing equipment.	11.571	-
Congressional Add: Hypersonics Enabling Manufacturing ***FY 2023 Accomplishments:*** Advanced Manufacturing and Applied Research Innovation Institute (AMARII) plans to advance enabling technologies for hypersonic activities by providing prototype development of various elements required for hypersonic missions by establishing a prototyping facility for hypersonic applications. This facility would concentrate on developing and testing new enabling technologies for various elements of a hypersonic vehicle. The proposed effort would also seek to expand curriculum for undergraduate and postgraduate courses for hypersonic-related technologies. AMARII has assembled the National Center for Defense Manufacturing and Machining (NCDMM)/America Makes; the National Additive Manufacturing Innovation Institute; Youngstown State University (YSU) for additive manufacturing assistance and potential support of educational aspects; Ursa Major Technologies, the developer of an additively manufactured rocket engine that has already been successfully implemented on the X-60A hypersonic test vehicle; NASA Glenn, to provide wind tunnel capabilities; and University of Texas at El Paso (UTEP), to provide expertise in additive manufacturing of refractory materials and research efforts in other material systems. The Army's Long Range Precision Fires group will support in an advisory capacity and as a transition partner. They have recommended that future research topics include thermal management solutions for high-speed trajectories, affordable high temperature capable structural materials, modeling of material solutions in demanding environments and highly integrated, conformal sensor systems. The Army has also requested the program investigate potential additional topics including material modeling, analysis for air-breathing missile systems, ultra-high temperature insulation	11.571	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 350 / *Manufacturing Innovation Institutes*

	FY 2023	FY 2024
materials, affordable ceramic matrix composites (CMCs), joining of CMC structures with functionally graded refractory high entropy alloys, complex thermal management solutions, printable electronics and radio frequency structures for highly integrated array sensor systems, reconfigurable antennas enabling multi-frequency operation, and Carbon/Silicon-Carbide (C/SiC) pre-impregnated (pre-preg) material development.		
Congressional Add: Additive Manufacturing Training (formerly El Paso Makes Contract Support for El Paso Manufacturers) ***FY 2023 Accomplishments:*** Driving Research, Innovation, and Value through Education in Additive Manufacturing (DRIVE AM) Youngstown, a partnership between the Youngstown State University (YSU), the University of Texas at El Paso (UTEP), Open Additive, LLC and the Youngstown Business Incubator (YBI), will be an extension of an established UTEP program created and implemented to produce a superior AM-educated military, domestic manufacturing workforce, and defense supply chain. DRIVE AM training offerings have varying levels of proficiency, each targeting soldiers, technicians, operators, engineers, Department of Defense (DoD) support personnel, personnel transitioning from the military, or veterans that are in active roles in the military or DoD, or in support of DoD through the defense manufacturing supply chain. DRIVE AM courses to be delivered under this project include: Introduction to Industrial Additive Manufacturing, Introduction to Additive Manufacturing Workflow, Laser Powder Bed Fusion Foundation, and Material Extrusion Foundation.	5.014	-
Congressional Adds Subtotals	397.552	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Each Manufacturing USA institute is established through a competitive selection process. The executing military department or agency, in close and continuous coordination with Office of the Under Secretary of Defense for Research and Engineering Manufacturing Technology Office (ManTech), publishes a formal solicitation (funding opportunity announcement) for proposals describing the scope of required activities and extensive proposal evaluation criteria. Non-Profit Organizations (including universities) are eligible to bid, and each bidder forms a broad consortium of industry and academic partners. The executing military department or agency, in close coordination with the Office of the Secretary of Defense (OSD), uses a team of government experts to evaluate each proposal against the evaluation criteria and selects a winning consortium. The final terms of the cooperative agreement/technology investment agreement between the selectee and the federal government are then negotiated and the Cooperative Agreement (CA) or Technology Investment Agreement (TIA) is signed. Throughout and after completion of this process, the federal government makes clear that members of non-selected teams are encouraged to join the selected consortium as conditions permit.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	Project (Number/Name) 351 / *Manufacturing Education and Workforce Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
351: *Manufacturing Education and Workforce Development*	3.993	9.813	5.101	5.739	-	5.739	5.953	6.243	6.177	6.282	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Manufacturing Education and Workforce Development (M-EWD) provides strategic leadership of advanced manufacturing talent development within the Defense Industrial Base (DIB) with three mission objectives: (1) invest in strategic education and workforce development capabilities, (2) expand the talent acquisition pool to promote diversity equity and inclusion (DEI) in manufacturing careers, (3) modernize manufacturing EWD by driving action within DIB-critical regional economies with a focus on Career & Technical Education (CTE). The M-EWD project drives regional action to modernize manufacturing CTE for the U.S. and organic DIB, invests in strategic education and workforce development capabilities, and expands strategic leadership of advanced manufacturing human capital development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Manufacturing Education and Workforce Development	4.992	5.101	5.739
Description: The Manufacturing Education and Workforce Development (M-EWD) project provides a strategic framework for DoD leadership of advanced manufacturing talent development and includes MII-led regional initiatives informed by labor market data profiles of regional economies, a pilot effort to develop an automated real-time labor market data portal, and launch of ManufacturingWorkforce.org, a dual-use digital learning platform with advanced manufacturing course offerings. ***FY 2024 Plans:*** Support development of whole-of-government EWD solutions applicable to the defense advanced manufacturing workforce. Expand Diversity, Equity, and Inclusion (DEI) in the manufacturing workforce by developing and adapting tailored curricula to expand participation opportunities and increasing the availability of instructional platforms and materials. ***FY 2025 Plans:*** Continue whole-of-government solutions in partnership with Interagency partners to tailor curricula for defense manufacturing, identify project successes within the Manufacturing Innovation Institutes (MII) ecosystems for replication and scale across the Manufacturing USA network, and establish ecosystem structures to meet defense manufacturing Career Technical Education (CTE) needs and scale to adjacent sectors. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.627 million between FY 2024 and FY 2025 is a minor year-to-year variance and addresses related readiness, posture, and logistics requirements.			
Accomplishments/Planned Programs Subtotals	4.992	5.101	5.739

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 351 / *Manufacturing Education and Workforce Development*

	FY 2023	FY 2024
Congressional Add: Manufacturing Industrial 4.0 Training Program	4.821	-
FY 2023 Accomplishments: This project will be executed across the DoD Manufacturing Innovation Insittute (MII) network, identifying targeted high-impact projects to increase fidelity of manufacturing training available to Industry 4.0 growth sectors. Projects will be executed via existing contractual arrangements with DoD MIIs and progress assessed quarterly to ensure timely impact to the growing field of Industry 4.0.		
Congressional Adds Subtotals	4.821	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	Project (Number/Name) 680 / *Manufacturing Science and Technology Program*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
680: *Manufacturing Science and Technology Program*	100.154	188.149	135.136	38.943	-	38.943	41.239	43.247	42.790	43.522	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Office of the Secretary Defense (OSD) Manufacturing Science and Technology Program (MSTP) concentrates on cross-cutting defense manufacturing needs that are beyond the ability of a single service to address. MSTP projects focus on cross-cutting defense manufacturing advancements and stimulate early development of manufacturing processes and enterprise business practices. The MSTP invests in broad technology initiatives within Advanced Electronics and Optics, Advanced Materials and Composites, Advanced and Emerging Manufacturing Processes, and Advanced Energetics Manufacturing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Advanced Electronics and Optics	10.932	10.650	21.589

Description: Advanced Electronics and Optics is a series of efforts addressing advanced manufacturing technologies for a wide range of applications such as sensors, radars, power generation, switches, and optics for defense applications. Focal points are productivity and efficiency gains in the defense manufacturing base to accelerate delivery of technical capabilities to impact current warfighting operations, and manufacturing technologies to reduce the cost, acquisition time and risk to our major defense acquisition programs. Future efforts will focus on advances in fuel cells, lasers, enhanced acuity micro-displays, and transparent ceramics for opto-mechanical and armor applications.

FY 2024 Plans:

Fund Year 4 of 4 for Improved Photovoltaic Power for Space Applications, Year 3 of 3 for High Power Magnetron and Advanced High Yield Infrared Focal Plane Arrays, and Year 3 of 5 for TRISoC project. Utilize the annual project call to select and initiate projects that support the National Defense Strategy and DoD critical technology areas.

FY 2025 Plans:

Fund year 4 of 5 for Transmit/Receive Integrated System on a Chip (TRISoC) and Direct-Write Manufacturing for Conformal Antennas, Year 3 of 3 for CEPSIS, High Voltage Materials for Thermal Batteries, CMOS Signal for Hypersonic Platforms, BLADE, Year 2 of 2 for Focal Plane Array Output, Year 2 of 3 for Advanced Pulse Power Solutions, and Year 1 of 3 for Optically Based Enhancements for Accurate Mechanical Sensors (O-Beams) and Automated Manufacturing of Small Format Liquid Reserve Batteries.

FY 2024 to FY 2025 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 680 / *Manufacturing Science and Technology Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The increase of $11.209 million between FY 2024 and FY 2025 reflects a significant re-phasing of Advanced Electronics and Optics projects that are supporting Directed Energy requirements and addresses related readiness, posture, and logistics requirements and funding for Economic Assumptions.			
Title: Advanced Materials and Composites ***Description:*** Advanced Materials and Composites is a series of efforts addressing advanced manufacturing technologies for a wide range of materials such as composites, metals, ceramics, nanomaterials, and metamaterials. Through productivity and efficiency gains, these manufacturing technologies will accelerate delivery of technical capabilities to impact current warfighting operations, while reducing the cost, acquisition time and risk of our major defense acquisition programs. Advanced materials manufacturing technologies undergoing development include materials for ballistic survivability and ballistic protection, survivability and rapid fabrication of structural components. ***FY 2024 Plans:*** Fund Year 3 of 5 for Self-Damping Structural Materials and Year 4 of 4 for Advanced Aeroshell Technology. Continue NRE RDT&E with existing propulsion Industrial Base, DoD Additive Manufacturing Working Groups, and MIIs to extrapolate hypersonics lessons-learned and scale to relevant HCM propulsion production. Extend coupon production, design of experiments, and integration activities for promising design parameters and build techniques for less complex but improved performance Scramjet combustor componentry. Fund Year 2 scramjet RDT&E to install and provide for the maintenance of large-format printers to meet capacity requirements. Utilize the annual project call to select and initiate projects that support the National Defense Strategy and DoD critical technology areas. ***FY 2025 Plans:*** Fund Year 3 of 3 for Self-Damping Structural Materials, Lightweight Hydrogen Fuel Cell Separator Plate Manufacturing, Year 3 of 4 for Mobile Fabrication and Repair, and Year 1 of 2 for Carbon Nanotube Fiber Cathodes for High Power Microwave Weapons for DoD. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $104.892 million reflects completion of the initial assessment and strategy development for the hypersonics industrial base conducted and accelerated significantly over FY 2023 and FY 2024.	95.539	114.227	9.029
Title: Advanced and Emerging Manufacturing Processes ***Description:*** Advanced and Emerging Manufacturing addresses advanced manufacturing technologies and business practices for defense applications. Key focus areas include direct digital (or additive) manufacturing, advanced manufacturing enterprise, machining, robotics, assembly, and joining. Projects selected will accelerate delivery of technical capabilities to impact current warfighting operations while reducing cost, acquisition time, and risk of major defense acquisition programs.	6.247	6.167	8.325

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 680 / *Manufacturing Science and Technology Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: Fund Year 3 of 5 for Direct-Write Manufacturing for Conformal Antennas. Utilize the annual project call to select and initiate projects that support the National Defense Strategy and DoD critical technology areas. ***FY 2025 Plans:*** Fund Year 3 of 3 for Joint Clothing and Textile Manufacturing Initiative, Year 2 of 3 for Nutritionally Tailored Food at the Point of Need, Precision Optical Wind Sensor, and Year 1 of 5 for Harnessing Microbe-Sourced Cellulose for Advanced Fiber Manufacturing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $2.158 million between FY 2024 and FY 2025 reflects a minor re-phasing of Advanced and Emerging Manufacturing Processes projects and addresses related readiness, posture, and logistics requirements.			
Title: Advanced Energetics Manufacturing ***Description:*** Advanced Energetics Manufacturing develops improved manufacturing capabilities for safer, low cost, high quality production of existing and newly developed ingredients and composites used in energetic materials production. Develops techniques such as additive manufacturing, microfluidics, continuous processing, resonant acoustic mixing, robotics, etc. for production of critical energetics and supporting ingredients to ensure Department access to these materials and enable development of new, highly advanced energetic systems for improved range and performance. ***FY 2024 Plans:*** Identify advanced manufacturing RDT&E solutions for energetics community manufacturing challenges informed by DBX-1 project outcomes. Utilize the annual project call to select and initiate projects that support the National Defense Strategy and DoD critical technology areas. ***FY 2025 Plans:*** No planned efforts for Advanced Energetics Manufacturing in FY 2025. New proposals demonstrating technical merit may be considered in future subject to budget availability. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $4.092 million between FY 2024 and FY 2025 reflects completion of Advanced Energetics Manufacturing projects.	4.078	4.092	0.000
Accomplishments/Planned Programs Subtotals	116.796	135.136	38.943

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 680 / *Manufacturing Science and Technology Program*

	FY 2023	FY 2024
Congressional Add: Advanced Composites for Hypersonics Aided by Digital Engineering (MACH-ADE) ***FY 2023 Accomplishments:*** Execution plan is being formulated in tandem with other hypersonic investments.	4.821	-
Congressional Add: Automated Manufacturing Technologies for Very High Temperature Composites ***FY 2023 Accomplishments:*** Execution plan is being formulated in tandem with other hypersonic investments.	4.821	-
Congressional Add: Custom Electrolytes for Military Lithium-Ion Batteries ***FY 2023 Accomplishments:*** Support the development of domestic manufacturing for Lithium-Ion battery electrolytes to remove reliance on foreign sources.	9.642	-
Congressional Add: Engineered Resilient Systems ***FY 2023 Accomplishments:*** Support the development of manufacturing systems with inherent durability in the face of supply chain disruptions through the implementation of advanced manufacturing techniques and fortified access to raw materials and manufacturing talent.	9.642	-
Congressional Add: Microelectromechanical Systems (MEMS) Mirror-Based LiDAR Sensor ***FY 2023 Accomplishments:*** Implement advanced manufacturing techniques and processes into manned and unmanned systems. Effort will allow cost-effective, high-resolution LiDAR systems to be provided throughout the DoD community.	2.893	-
Congressional Add: Advanced Materials and Materials Manufacturing Processes ***FY 2023 Accomplishments:*** Continue efforts initiated in FY 2022 and work through development and implementation of Cold Spray technologies within the Department of Defense.	5.785	-
Congressional Add: High Temperature Composite Material Manufacturing ***FY 2023 Accomplishments:*** Address manufacturability and scalability of carbon/carbon and other high temperature materials to meet requirements developed from Hypersonic platforms.	9.642	-
Congressional Add: Large Scale Manufacturing (formerly High Performance Computing (HPC) Enabled Advanced Manufacturing) ***FY 2023 Accomplishments:*** Continue efforts already underway with previous year funding. Effort being performed with support from Army ERDC and University of Maine. Use HPC in the additive manufacturing processes to avoid material mismatch over long-period printing.	24.107	-
Congressional Adds Subtotals	71.353	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 680 / *Manufacturing Science and Technology Program*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

ManTech projects are awarded competitively through the DoD Service Laboratories. Approximately 1/3 of the total active topics are awarded to new initiatives annually.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	Project (Number/Name) 681 / *Technology Industrial Base*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
681: *Technology Industrial Base*	0.000	0.000	0.000	6.997	-	6.997	7.390	7.817	7.737	7.870	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Realignment from PE 0605797D8Z P043 effective FY 2025

A. Mission Description and Budget Item Justification

Technology Industrial Base (TIB) provides support to technology leaders in identifying industrial innovation base needs; characterizing and assessing priority technology investments, identifying and mitigating issues and risks impacting the industrial innovation base, and exploiting opportunities to advance technology development, testing, and manufacturing. TIB efforts develop near- and long-term strategies and employ mechanisms to retain the U.S. advantage in current and emerging modernization technology priorities by addressing the capabilities of the industrial innovation base to develop, test, manufacture, and sustain them. One of TIB's main objectives is to create balance between promotion of the industrial innovation base while protecting the technology from interference or exploitation by competitors. This balance will aid the Department's advancing critical and emergent technologies ahead of competitor nations and actors while sustaining a healthy, resilient, and globally competitive industrial innovation base. This portfolio of activity extends efforts initiated in response to FY 2019 National Defense Authorization Act (NDAA) Section 1793.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Technology Industrial Innovation Base (TIB)	0.000	0.000	6.997
Description: This project uses a three-step approach: (1) Assess, (2) Protect/Promote; and (3) Monitor. In the first step, TIB uses emerging technology assessments to translate technology needs to manufacturing and industrial innovation base requirements to identify industrial innovation base issues, risks, and opportunities. TIB created an assessment methodology that incorporates four types of studies to provide a full overview of the technology from a manufacturing and industrial innovation base point of view. The results of the assessments are used to generate industrial-innovation-base inputs to technology roadmaps, develop an investment plan addressing the needs of the industrial innovation base, and create technology and industrial innovation base protection and promotion strategies (second step of the approach). TIB leverages DoD and Federal Government tools and initiatives to implement the strategies. In the third step, TIB uses data analytics to measure the success of mitigation and exploitation strategies, establish trends in the markets, and identify the need for additional assessments or changes in investments and strategies.			
FY 2024 Plans: FY 2024 projects were funded and executed via PE 0605797D8Z, Maintaining Technology Advantage, under P043, at a level of $6.685M			
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680D8Z / *Defense Wide Manufacturing Science and Technology Program*	**Project (Number/Name)** 681 / *Technology Industrial Base*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue to identify and execute industrial base assessments in support of priority technology areas across the DoD, ensuring industrial base support of next-generation capabilities. Assessments will identify opportunities for additional Research and Engineering investments to ensure a robust industrial base in advanced manufacturing for critical technology areas. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $6.983 million between FY 2024 and FY 2025 is due to the transfer of P043 in PE 0605797D8Z / Maintaining Technology Advantage to better align the efforts within OUSD(R&E) in support of implementing the 2023 National Defense S&T Strategy and the 2022 National Defense Strategy. This also addresses related readiness, posture, and logistics requirements.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	6.997

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603716D8Z *I Strategic Environmental Research and Development Program (SERDP)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	732.920	86.466	60.387	58.838	-	58.838	57.612	58.406	59.361	60.474	-	-
470: *Strategic Environmental Research and Development Program (SERDP)*	732.920	86.466	60.387	58.838	-	58.838	57.612	58.406	59.361	60.474	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Strategic Environmental Research and Development Program (SERDP) mission is to improve DoD readiness and environmental performance by providing new scientific knowledge and developing cost-effective technologies. The SERDP does this by addressing high-priority DoD environmental technology requirements such as addressing polyfluoroalkyl substance (PFAS) contamination, developing fluorine-free fire suppression formulations, and improving corrosion resistance for weapons systems and platforms. Technologies developed by SERDP enhance military operations, improve military systems' effectiveness, enhance military training/readiness, sustain DoD's training and test ranges and installation infrastructure, and help ensure the safety and welfare of military personnel and their dependents. The keys to the growing list of SERDP technological successes are the ability to respond aggressively and proactively to priority defense environmental needs; the pursuit of world-class technical excellence; and an emphasis on continuous technology transfer.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	88.411	60.387	62.046	-	62.046
Current President's Budget	86.466	60.387	58.838	-	58.838
Total Adjustments	-1.945	0.000	-3.208	-	-3.208
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.945	-			
• Total Adjustment	-	-	-3.208	-	-3.208

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 470: *Strategic Environmental Research and Development Program (SERDP)*		
Congressional Add: *PFAS remediation and disposal technology and program increase*	15.000	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603716D8Z *I Strategic Environmental Research and Development Program (SERD P)*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *AFFF replacement, disposal, and cleanup technology*	15.000	-
Congressional Add Subtotals for Project: 470	30.000	-
Congressional Add Totals for all Projects	30.000	-

Change Summary Explanation

No change in FY 2025 from previous President's Budget.

FY 2025 increase from FY 2024 for PFAS alternatives, studies in fate and transport, and development of more effective clean up technologies. Increasing costs of at-sea operational Unexploded Ordnance (UXO) remediation testing and expansion of resource conservation efforts onto more bases.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603716D8Z / *Strategic Environmental Research and Development Program (SERDP)*	Project (Number/Name) 470 / *Strategic Environmental Research and Development Program (SERDP)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
470: *Strategic Environmental Research and Development Program (SERDP)*	732.920	86.466	60.387	58.838	-	58.838	57.612	58.406	59.361	60.474	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The SERDP`s mission is to improve DoD mission readiness and environmental performance by providing new scientific knowledge and developing cost-effective technologies. SERDP does this by addressing high-priority DoD environmental technology requirements such as addressing polyfluoroalkyl substance (PFAS) contamination, developing fluorine-free fire suppression formulations, and improving corrosion resistance for weapons systems and platforms. Technologies developed by SERDP enhance military operations, improve military systems' effectiveness, enhance military training/readiness, sustain DoD‘s training and test ranges and installation infrastructure, and help ensure the safety and welfare of military personnel and their dependents. The keys to growing list of SERDP technological successes are the ability to respond aggressively and proactively to priority defense environmental needs; the pursuit of world-class technical excellence; and an emphasis on continuous technology transfer.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Environmental Restoration (ER)	17.040	16.869	16.483
Description: Investments in Environmental Restoration reduce the DoD’s environmental cleanup liability (currently greater than $30 billion) by developing technologies for the cost-effective detection, characterization, containment, and remediation of contamination in soil, sediments, and water. These investments directly assist the DoD with compliance with the Resource Conservation & Recovery Act (RCRA), the National Environmental Policy Act (NEPA), and the Clean Water Act, among others.			
FY 2024 Plans: Development of PFAS destruction technologies, both thermal and non-thermal, will continue, with an increased emphasis on technologies for in situ destruction of per- and polyfluoroalkyl substances (PFAS) and aqueous film-forming foam (AFFF) residue that avoid the expense of pump-and-treat methods. Studies of the ecological impacts of PFAS mixtures initiated in FY 2022 will continue. New projects will be initiated to better understand the lifecycle and movement of PFAS in the subsurface, to improve our ability to measure PFAS in the environment, and to improve management of PFAS-impacted stormwater.			
FY 2025 Plans: New projects will be initiated to better understand transformation of PFAS found in soil and groundwater at AFFF-impacted sites and improve management of PFAS-impacted groundwater-to-surface water at DoD facilities, Development of PFAS destruction			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603716D8Z / *Strategic Environmental Research and Development Program (SERDP)*	**Project (Number/Name)** 470 / *Strategic Environmental Research and Development Program (SERDP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
technologies will continue that avoid the expense of pump-and-treat methods or off-site disposal. Studies will continue on the ecological impacts of PFAS mixtures and developing an understanding of transport potential of PFAS in concrete and asphalt. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 increase ($2.4 million) is the result of new studies required to understand fate and transport of PFAS in the ecosystem (groundwater, soil, surface water) for developing more effective and expansive clean-up technologies.			
Title: Munitions Response (MR) ***Description:*** Investments under Munitions Response involve development of detection, classification, and remediation technologies for unexploded ordnance (UXO) to address the significant DoD liability in the Military Munitions Response Program under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Investments are also made to improve active range clearance. Remediation techniques with explosive ordnance disposal (EOD) personnel outside the danger zone is a program goal and robotic methods are a key technology under consideration. ***FY 2024 Plans:*** Testing will continue for both acoustic and electromagnetic sensor systems for detecting UXOs in estuaries and wetlands developed over the past three years at standard test sites with high sensitivity and selectivity in discriminating UXO from inert debris. ***FY 2025 Plans:*** Methods to classify UXO using remote tools will be developed. Methods to remotely remediate UXO underwater using ship launched tools will be developed. Remediation techniques with explosive ordnance disposal (EOD) personnel outside the danger zone is a program goal and robotic methods are a key technology under consideration. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 decrease ($1.8 million) is the result of technologies maturing to demonstration and validation efforts under the Environmental Security Technology Certification Program.	4.540	5.730	5.344
Title: Resource Conservation and Resilience (RC) ***Description:*** Investments in Resource Conservation and Resilience focus on development of the science and technologies required to sustain training and testing ranges and meet compliance obligations according to the Sikes Act, Endangered Species Act, and NEPA. This includes management strategies and tools to enable installation staff to carry out their duties more effectively and development of data and models to enable base planners to increase resilience of their facilities in accordance with regulations, including the National Historic Protection Act, Archaeological Resources Protection Act, Native American Graves Protection and Repatriation Act, and Protection of Historic Properties 36 CFR Part 800.	19.916	23.279	22.893

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603716D8Z / *Strategic Environmental Research and Development Program (SERDP)*	**Project (Number/Name)** 470 / *Strategic Environmental Research and Development Program (SERDP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: New projects will be initiated to develop models to aid installation planning staff to cope with the interaction of natural hazards, invasive species, and ecosystem transformations. Projects will continue to support the effects of multiple stressors on threatened and endangered species that impact DoD mission activities, and build upon the successful technology acceleration strategy of the SERDP National Innovation Landscape Network. Projects will also continue that develop models, tools, and data that evaluate the installation systems resilience to compounded threat and natural hazards, such as interactions of hurricanes and wildfire. Lastly, new projects will advance our understanding and modeling of wildland fire smoke emissions and develop tools for smoke management from prescribed fires. ***FY 2025 Plans:*** New projects will be initiated to advance the understanding and methods of invasive species management and DoD-relevant threatened, endangered, and at-risk species responses to multiple stressors. Scenario modeling tools capable of integrating installations and ecosystem will be developed to assess threats associated with weather extremes and the impacts on installations. The National Innovation Landscape Network sites will be extended to Hawaii and Colorado. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 increase ($0.7 million) will grow investment in projects that focus on key DoD geographies experiencing rapid change from invasive species, wildland fire threats, species declines, and models of community development encroachment. Areas with high concentrations of DoD installations such as Alaska, Southern California, Sonoran Desert, Pacific Islands, and the Southeast US possess unique challenges from compounded natural hazards on mission activities.			
Title: Weapons Systems and Platforms (WP) ***Description:*** Investments in Weapons Systems and Platforms are focused on development of technologies and materials that reduce the waste and emissions associated with the manufacturing, maintenance, and use of DoD weapons systems and platforms to reduce current and future environmental liabilities. These investments directly assist the DoD in compliance with the Clean Air Act, the Clean Water Act, the American Innovation and Manufacturing (AIM) Act, and NEPA. ***FY 2024 Plans:*** Continue efforts on understanding the interactions of fuel molecules with a foam blanket at multi-scales using experiments and modeling with the goal of developing firefighting formulations with improved performance against gasoline fires and in the presence of saltwater and at extreme temperatures to further address the intent of Sec 323 of the 2020 NDAA. Initiate projects to develop PFAS-free textile coatings that are hydrophobic and have potential to be oleophobic. Begin quantifying PFAS emissions from PFAS-containing explosives and flares simulating open burning conditions. Begin developing methodologies to improve the selectivity and efficiency of synthetic organic chemistry processes for preparation and demilitarization of energetic	14.970	14.509	14.118

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603716D8Z / *Strategic Environmental Research and Development Program (SERDP)*	**Project (Number/Name)** 470 / *Strategic Environmental Research and Development Program (SERDP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
molecules through use of field effects (e.g., electrochemical, biological catalytic). Identify promising processing methods and formulations for solid rocket propellants to eliminate isocyanate binders. Develop novel chromium-free treatments to reduce use of chromium and cadmium in corrosion mitigating coatings to address DFARS Case 2020-D031, through development of novel molybdenum-inhibitors and Schiff bases. Begin to develop processes for refractory alloy recycling for powder metallurgy and additive manufacturing applications to reduce cost, energy, and environmental impact. ***FY 2025 Plans:*** Use surfactant molecule and film dynamics and structure-based models to develop improved PFAS-free firefighting formulations with improved foam stability and improved firefighting performance in the presence of contaminants and at extreme operational temperatures to further address the intent of Sec 323 of the 2020 NDAA. Develop promising PFAS-free textile coatings that are omni-phobic (i.e., hydrophobic and oleophobic) and are durable. Initiate projects for alternatives to PFAS in energetics processing and in explosives and pyrotechnics operations, and quantify PFAS emissions from burning of fluoropolymer-bound energetics. Continue to develop field effects processing to more selectively and efficiently prepare and demilitarize energetic molecules, to meet proposed EPA requirements. Develop medium to large caliber rocket propellants that do not use isocyanate-based binders with similar specific impulse values relative to state-of-the-art aluminized-rocked propellants and develop robust non-isocyanate coatings with good adhesion and promising durability. Continue to develop corrosion-mitigating advanced military coating systems with reduced environmental impact (DFARS Case 2020-D031). Identify best processes for refractory alloy recycling for powder metallurgy and additive manufacturing applications to reduce cost, energy, and environmental impact. Develop novel refrigerants and refrigeration methods with low global warming potential and do not cause significant fire and toxicity risks to soldiers in crew compartments. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 increase is to expand development of PFAS alternatives in mission critical weapons systems and platforms usages such as explosive formulations.			
Accomplishments/Planned Programs Subtotals	56.466	60.387	58.838

	FY 2023	FY 2024
Congressional Add: PFAS remediation and disposal technology and program increase	15.000	-
FY 2023 Accomplishments: The focus for the FY 2023 congressional add was on further developing both novel PFAS destruction technologies as well as improving existing PFAS destruction technologies, with particular attention on improving our understanding of the mechanisms of PFAS destruction as well as the ultimate		

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603716D8Z / *Strategic Environmental Research and Development Program (SERDP)*	**Project (Number/Name)** 470 / *Strategic Environmental Research and Development Program (SERDP)*

	FY 2023	FY 2024
disposition of PFAS after treatment. The funding enabled progress on dozens of new, innovative technologies for destruction of PFAS in waters and solids.		
Congressional Add: AFFF replacement, disposal, and cleanup technology	15.000	-
FY 2023 Accomplishments: Determined that hydrogen bonding to promote the stability of the surfactant layer at the interface between the fuel and foam, and foam and air is critical and thus molecular dynamics will be a key tool going forward to improve foam stability. Continued to develop siloxane surfactants and found that sulfobentaine siloxanes reduce extraction into gasoline and improve foam stability. Developed a number of potential surfactant, polymeric, and nano-particle additives that have improved foam stability and/or fire suppression capability in bench-level experiments. Developed models on water mist fire suppression systems for aircraft hangers that provides understand of their effectiveness and limitations.		
Congressional Adds Subtotals	30.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603727D8Z *I Joint Warfighting Program (JWP)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	59.211	1.841	2.749	2.684	0.000	2.684	2.727	2.764	2.809	2.861	Continuing	Continuing
727: *Joint Warfighting*	59.211	1.841	2.749	2.684	0.000	2.684	2.727	2.764	2.809	2.861	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Joint Warfighting Program (JWP) supports the Assistant Secretary of Defense for Acquisition (ASD(A))'s responsibilities for acquisition and portfolio management. The JWP underwrites analyses, studies, performs limited scope experiments, wargaming, and partnerships that define joint capability gaps and develops credible requirements for follow-on acquisition efforts. These analyses and assessments deliver independent perspectives on potential remedies to align acquisition investments and solutions for joint capability gaps created by future warfighting environments and emerging threats. The JWP supports mission engineering integration management, as well as other high priority emerging issues requiring independent analysis to inform acquisition decisions that impact National Security.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	2.411	2.749	2.830	0.000	2.830
Current President's Budget	1.841	2.749	2.684	0.000	2.684
Total Adjustments	-0.570	0.000	-0.146	0.000	-0.146
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.482	-			
• SBIR/STTR Transfer	-0.088	-			
• Program Adjustment	-	-	-0.146	-	-0.146

Change Summary Explanation

FY 2025 decrease is due to department realignment.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603727D8Z / *Joint Warfighting Program (JWP)*	Project (Number/Name) 727 / *Joint Warfighting*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
727: *Joint Warfighting*	59.211	1.841	2.749	2.684	0.000	2.684	2.727	2.764	2.809	2.861	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Warfighting Program (JWP) supports the Assistant Secretary of Defense for Acquisition (ASD(A))'s responsibilities for acquisition and portfolio management. The JWP underwrites analyses, studies, performs limited scope experiments, wargaming, and partnerships that define joint capability gaps and develops credible requirements for follow-on acquisition efforts. These analyses and assessments deliver independent perspectives on potential remedies to align acquisition investments and solutions for joint capability gaps created by future warfighting environments and emerging threats. The JWP supports mission engineering integration management, as well as other high priority emerging issues requiring independent analysis to inform acquisition decisions that impact National Security.

Anticipated Impact:
Provides analytical support for acquisition efforts for ASD(A) staff elements and joint customers. It promotes analyses and assessments for acquisition insights and decisions focused on capability development serving the needs of joint forces and the warfighter.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Acquisition Analysis for Joint Capability Requirements	1.841	2.749	2.684
Description: Mission Engineering & Analysis (FY 2023 Accomplishments): - Provided mission engineering support and analysis to support portfolio reviews across the Department, with a focus on Cruise Missile Defense of the Homeland, Defense of Guam and Suppression of Enemy Air Defense mission areas. - Worked collaboratively across OSD, Joint Staff and the Services conducting integrated analyses across key priority mission areas. - Standardized training materials for Acquisition Professionals to improve implementation of Mission Engineering efforts into acquisition portfolio management. Acquisition Intelligence (FY 2023 Accomplishments):			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603727D8Z / *Joint Warfighting Program (JWP)*	**Project (Number/Name)** 727 / *Joint Warfighting*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continued to address the strategic challenges of integrating intelligence data and processes with acquisition programs and enterprise; analyzes, matures, and aligns OSD, IC, and Service/Agency strategic initiatives, processes, and capabilities. Seeks to infuse threat data and intelligence parameters into each of the acquisition pathways to enable and train the acquisition workforce. Capability Portfolio Management (FY 2023 Accomplishments): - Conducted Mature Integrated Acquisition Portfolio Reviews to provide DoD leadership an enterprise perspective of health, risks, opportunities, and interoperability across the Services. Reviews of NC3, Space, EW, Cyber, JADC2, Defense of Guam, and Sustainment. Partner with Joint Staff, OSD to align requirements, acquisition, budget, and technology portfolio management activities. Competitive Advantage Pathfinder (CAPs) (FY 2023 Accomplishments): - Emergent requirement to accelerate joint capabilities to support DSD initiative. Includes funding for experimentation and cross-service transition of the C-C5ISRT CAP Sprint I efforts. Converting existing, mature capabilities into modular, open system architectures that enable application on new platforms in new domains. ***FY 2024 Plans:*** Continued acquisition analysis through a portfolio management lens to address the critical joint warfighting mission areas critical to national defense. Major focus areas will support the following projects: Mission Engineering and Integration Mission Thread Pathfinder Analysis: Continue development of a Digital Engineering environment a re-usable Digital Engineering environment and methodology for these mission threads to help automate, simplify, and integrate Mission Engineering. Mission Engineering and Integration: Continued effort for the Department of Defense to effectively implement enterprise Capability Portfolio Management to align strategic efforts and optimize capability investments across the Department. Follow-on USSF C2 Review: Continue assessment of the status of execution phase activities and challenges in costing an agile software program, flexibility and extensibility of the technical architecture, software development control processes, and sufficiency of mechanisms used to map requirements and monitor execution progress to product roadmaps.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603727D8Z / *Joint Warfighting Program (JWP)*	**Project (Number/Name)** 727 / *Joint Warfighting*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Acquisition Intelligence: continue the development and streamline Acquisition Intel policy, guidance & training to improve the integration of intel into acquisition, ensuring threat informed acquisition: - Facilitating innovative, tailored & decision quality intelligence - Facilitating the integration of intel into acquisition portfolio management - Enabling the acquisition intel workforce in providing more effective data driven intel - Enabling the continued professionalization of the acquisition intel workforce ***FY 2025 Plans:*** The Joint Warfighting Program (JWP) FY 2025 funding will be used to fund analyses, studies, and limited scope experiments that define joint capability gaps and develops credible requirements for acquisition efforts in support of the Assistant Secretary of Defense for Acquisition (ASD(A)). Studies funded will consist of follow-on FY 2024 studies to completion and new studies requiring analysis used by stakeholder in making critical acquisition decisions. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease is due to department realignment.			
Accomplishments/Planned Programs Subtotals	1.841	2.749	2.684

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603769D8Z / *Distributed Learning Advanced Technology Development*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	69.341	0.161	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
776: *Advance Distributed Learning (ADL)*	69.341	0.161	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

Based on a Memorandum of Agreement between OUSD(P&R) and DHRA, the Advanced Distributed Learning (ADL) program is transferred to DHRA for oversight responsibilities from P&R to DHRA effective FY 2024. This agreement transfers funds encompassing Operation and Maintenance (O&M), Defense-Wide and Research, Development, Test and Evaluation (RDT&E) appropriations.

A. Mission Description and Budget Item Justification

This program supports the Department's initiative for Taking Care of People.

Advanced Distributed Learning (ADL) program is helping DoD evolve its distributed learning systems (e.g., online courses, smartphone-based learning, and DoD-wide enterprise systems for training and education). These improvements benefit DoD in several ways: (1) EFFICIENCY: Increase business systems' efficiency, saving time and resources, by eliminating duplications and developing shared services for digital learning technology and data. (2) EFFECTIVENESS: Improve the quality and efficiency of training/education delivery via online systems by developing modern technologies, integrated data systems, and associated learning science, ultimately impacting personnel readiness.

This program was originally established in response to Section 378 of Public Law 105-261, the National Defense Authorization Act for FY 1999. Other authorities were later provided through, for example, the Defense Planning Guidance. The ADL program directly supports all DoD Components, and as a leader in the field of distributed learning technologies, also coordinates with other Federal agencies, Allies, and Partners. This leads to the program's third benefit: (3) INTEROPERABILITY: It strengthens interagency, interorganizational, and multinational interoperability by developing shared distributed learning capabilities and policy and through leadership in DoD, Federal, and Coalition communities of practice.

The program's work falls into three interrelated categories: (A) Modernization, (B) Documentation, and (C) Coordination. The "modernization" work involves Advanced Technology Development (RDT&E subfield Advanced Technology Development 6.3) in technical areas such as e-learning, mobile learning, IT/data interoperability, learner data modeling and analytics, and associated learning science. These efforts inform the program's "documentation" work, including the authoring and upkeep of technical guidance and policy documents, such as DoD Instruction 1322.26 ("Distributed Learning") and software/data interoperability specifications. Finally, the documentation work drives "coordination" efforts, which consist of implementation support and interagency, interorganizational, and international (e.g., NATO) coordination.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603769D8Z *I Distributed Learning Advanced Technology Development*

This program's modernization investments are vetted through the Defense ADL Advisory Committee, a working group of military personnel and DoD/Federal civilians who formally represent their organizations' distributed learning interests. These requirements are also aligned to DoD/Federal strategic direction, such as the DoD Digital Modernization Strategy, DoD and Federal Data Strategies, and Personnel and Readiness Strategy for 2030. They are also considered against emerging industry trends and technologies.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.201	0.000	0.000	-	0.000
Current President's Budget	0.161	0.000	0.000	-	0.000
Total Adjustments	-0.040	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-0.040	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

Based on a Memorandum of Agreement between OUSD(P&R) and DHRA, the Advanced Distributed Learning (ADL) program is transferred to DHRA for oversight responsibilities from P&R to DHRA effective FY 2024. This agreement transfers funds encompassing Operation and Maintenance (O&M), Defense-Wide and Research, Development, Test and Evaluation (RDT&E) appropriations.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Advance Distributed Learning (ADL)	0.161	-	-
Description: Advance Distributed Learning (ADL) program serves as the innovation hub for distributed learning across DoD and other government agencies. The ADL program supports DoD-wide initiatives for innovation, modernization, and advancement of online and mobile electronic training capabilities as well as associated enterprise-wide software/data services. Activities include advanced technology design and development, demonstrations, assessments, and associated policy stewardship. Results improve efficiencies and reduce costs, in part, by reducing time spent in face-to-face instruction, allowing more time for practical application and repetition, increasing interoperability (which enables discovery, retrieval, and reuse of distributed learning content), and researching and prototyping methods of distributed learning with superior motivational and learning outcomes.			
Accomplishments/Planned Programs Subtotals	0.161	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603769D8Z *I Distributed Learning Advanced Technology Development*

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603781D8Z / *Software Engineering Institute (SEI)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	11.874	16.699	16.982	-	16.982	17.383	17.743	18.130	18.494	Continuing	Continuing
781: *Software Engineering Institute (SEI)*	-	11.874	16.699	16.982	-	16.982	17.383	17.743	18.130	18.494	Continuing	Continuing

Note

New Start (Y/N): No

This Software Engineering Institute (SEI) Advanced Technology Development Program Element (PE) applies the software and computer science concepts developed under the 0602751D8Z PE to research, develop, and rapidly transition state-of-the-art software technology, tools, development environments, and best practices to improve the engineering, management, fielding, evolution, acquisition, and sustainment of software-intensive Department of Defense (DoD) systems.

A. Mission Description and Budget Item Justification

This program supports the Departments initiatives to Build a Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

Software is more pervasive than ever, and computer programs are growing in size and complexity. Designing, managing, and securing integrated, complex, and large-scale mission-critical systems are abilities that the Department of Defense (DoD) and the Defense Industrial Base (DIB) have not yet mastered. Reliance on software-intensive mobile and net-based products and systems has increased (e.g., Joint Tactical Radio System, USS ZUMWALT (DDG-1000), Joint Strike Fighter, F-22, and Army Modernization). As stated in the February 2018 Defense Science Board Report, “Design and Acquisition of Software for Defense Systems,” software is a crucial and growing part of weapons systems and the national security mission, and the DoD must address its ability to build and sustain software continuously and indefinitely. With growing global parity in software engineering, the DoD must maintain leadership to ensure a competitive advantage.

The Software Engineering Institute (SEI) Federally Funded Research and Development Center (FFRDC) was established in 1984 as an integral part of the DoD’s initiative to identify, evaluate, and transition software engineering technologies and practices. The mission of the SEI is to provide the DoD with technical leadership and innovation through research and development to advance the practice of software engineering and technology. The SEI works across government, industry, and academia to improve the state of software engineering from the technical, acquisition, and management perspectives. The SEI engages in research and development of critical software technologies and tools and collaborates with the larger software engineering research community. It facilitates rapid transition of software engineering technologies into practice and evaluates emerging software engineering technologies to determine their potential for improving software-intensive DoD systems. Since its inception, the SEI has helped to transform the fields of software engineering and acquisition, network security, real-time systems, software architectures, and software-engineering process management.

The SEI program element (PE) addresses the critical need to research, develop, and rapidly transition state-of-the-art software technology, tools, development environments, and best practices to improve the engineering, management, fielding, evolution, acquisition, and sustainment of software-intensive DoD systems. The

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603781D8Z *I Software Engineering Institute (SEI)*

research conducted by this PE directly benefits the technical domains, such as Command, Control, Communications, Computers, and Intelligence (C4I), Autonomy and Artificial Intelligence (AI), Cyber, and Engineered Resilient Systems.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	12.306	16.699	17.119	-	17.119
Current President's Budget	11.874	16.699	16.982	-	16.982
Total Adjustments	-0.432	0.000	-0.137	-	-0.137
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.431	-			
• Program Adjustments	-0.001	-	-0.171	-	-0.171
• Economic Assumptions	-	-	0.034	-	0.034

Change Summary Explanation

Reduction of $0.171 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.034 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603781D8Z / *Software Engineering Institute (SEI)*	Project (Number/Name) 781 / *Software Engineering Institute (SEI)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
781: *Software Engineering Institute (SEI)*	-	11.874	16.699	16.982	-	16.982	17.383	17.743	18.130	18.494	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project focuses on two main research thrusts with known military applications: (1) Software Engineering, Systems Verification and Validation, and Mission Assurance (formerly Mission Assurance); and (2) Information Assurance.

Software Engineering Institute (SEI) research focuses on the most significant and pervasive software challenges within the Department of Defense (DoD), such as the scalability and reliability of software assurance, supply chain risk management, validation of and trust in autonomous systems, human-computer and human-technology teaming and interaction, computing and communication at the tactical edge, and efficiency and performance of acquisition strategies and software development appropriate for a contested cyber environment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: SEI Advanced Technology Development in the Area of Software Engineering, Systems Verification and Validation, and Mission Assurance	8.210	14.902	15.118
Description: This research seeks to mature and rapidly prototype techniques to verify methods for identifying requirements, systems of systems architectures, and virtual integration of components. Furthermore, research in this area will pursue rapid prototyping and transitioning of capabilities that verify requirements for software assurance, analysis/control of unverified code and automated repair of damaged code. Software production and code analysis methods developed through this program will also improve the ability to predict how complex software systems, including AI-enabled systems, will behave in untested environments. Increasingly, large numbers of lines of code and the addition of machine-learning techniques will require a commensurate increase in sophisticated verification and validation mechanisms. ***FY 2024 Plans:*** Integrate techniques in system measurement, software development and operations, and model based systems engineering for an automated assessment, modeling, and software deployment process. Focus on strategies for resilience and mission assurance in large complex infrastructures and develop prototype systems that can be transitioned and tested into DoD applications from cloud to embedded systems. ***FY 2025 Plans:*** Integrate techniques in automated learning for system measurement, software Development and Operations, and model-based systems engineering for an automated assessment, modeling, and software deployment process. Focus on strategies for			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603781D8Z / *Software Engineering Institute (SEI)*	**Project (Number/Name)** 781 / *Software Engineering Institute (SEI)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
resilience and mission assurance in large complex infrastructures and develop prototype systems that can be transition and tested into DoD applications from cloud to embedded systems. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.216 between FY 2024 and FY 2025 reflect additional investment in developing system measurement techniques, along with system prototypes.			
Title: SEI Advanced Technology Development in the Area of Information Assurance ***Description:*** Powerful machine learning algorithms can be subverted by malicious manipulation or falsification of data collected through normal channels. Algorithms must be trusted and effective in the presence of adversaries. This thrust seeks to defend against and minimize the impacts of information falsification attacks. ***FY 2024 Plans:*** Enable combined risk analysis between software, machine learning, and cyber security to enable assessment and management of automated systems. These risk metrics will be introduced to a variety of DoD applications from system assessment, to enterprise cloud analytics, and legacy embedded systems. ***FY 2025 Plans:*** Enable combined distributional machine learning for risk analysis between software, machine learning, and cyber security to enable assessment and management of automated systems. These risk metrics will be introduced to a variety of DoD applications from system assessment, to enterprise cloud analytics, and legacy embedded systems. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.067 million between FY 2024 and FY 2025 reflect minor budget fluctuations.	1.734	1.797	1.864
Title: Artificial Intelligence Engineering Initiatives ***Description:*** Artificial Intelligence (AI) engineering is an emergent discipline focused on developing tools, systems, and processes to enable the application of AI in real-world contexts. The rise in availability of computing power and massive datasets have led to the creation of new AI, models, and algorithms encompassing thousands of variables and capable of making rapid and impactful decisions. Too often, though, these capabilities work only in controlled environments and are difficult to replicate, verify, and validate in the real world. The need for an engineering discipline to guide the development and deployment of AI capabilities is urgent. AI engineering aims to provide a framework and tools to proactively design AI systems to function in environments characterized by high degrees of complexity, ambiguity, and dynamism; and aims to equip practitioners to develop systems across the enterprise-to-edge spectrum, to anticipate requirements in changing operational environments and conditions, and to ensure human needs are translated into understandable, ethical, and thus trustworthy AI.	1.930	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603781D8Z / *Software Engineering Institute (SEI)*	**Project (Number/Name)** 781 / *Software Engineering Institute (SEI)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Accomplishments/Planned Programs Subtotals	11.874	16.699	16.982

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• BA 2, RDT&E, PE # 0602751D8Z: *Software Engineering Institute Applied Research*	9.788	11.168	11.310	-	11.310	11.570	11.812	12.068	12.309	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	284.902	257.110	165.798	-	165.798	221.265	248.305	252.223	258.755	Continuing	Continuing
730: *Concepts and Capabilities*	0.000	204.902	182.289	124.353	-	124.353	176.927	180.557	184.426	188.115	Continuing	Continuing
731: *Innovation and Modernization*	0.000	80.000	74.821	41.445	-	41.445	44.338	67.748	67.797	70.640	Continuing	Continuing

Note

New Start (Y/N): No.

FY 2025 Funding will be transferred to Project 730 Concepts and Capabilities during the year of execution and budgeted in this project beginning in FY 2026.

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build a Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

The Defense Innovation Acceleration (DIA) program accelerates innovative capability prototypes (TRL 5-7) that address cross-Service/cross-domain military needs in the 24-to-36-month timeframe. Prototype projects are identified through an ideation process that involves Defense-wide participation and detailed physics-based mission analysis to identify impactful capability requirements. Operational and strategic capability gaps are identified through Joint Warfighting Concept aligned mission analysis. DIA focuses on providing prototype systems in support of multi-component experimentation, informing programs of record and validating requirements. DIA prototypes will be evaluated in operationally relevant demonstrations in conjunction with Office of the Assistant Secretary of Defense for Mission Capabilities (OASD(MC)) experimentation events. DIA will also harness small business and non-traditional performer innovation that creates prototypes to address DoD's modernization challenges.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	293.504	257.110	265.225	-	265.225
Current President's Budget	284.902	257.110	165.798	-	165.798
Total Adjustments	-8.602	0.000	-99.427	-	-99.427
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-8.570	-			
• Program Adjustments	-	-	-99.427	-	-99.427

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*

• Cancelled Account	-0.032	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	**FY 2023**	**FY 2024**
Project: 730: *Concepts and Capabilities*		
Congressional Add: *High-Altitude Optical Reconnaissance Unit and Sensor (HORUS)*	20.000	-
Congressional Add: *Open-Source Intelligence (OSI)*	3.000	-
Congressional Add Subtotals for Project: 730	23.000	-
Congressional Add Totals for all Projects	23.000	-

Change Summary Explanation

The overall FY 2025: Program reduction of $99.427 million consists of the following:

+$0.464 million for Economic Assumptions
-$6.927 million realigned funds to the Multi-Domain Joint Operations (MDJO) PE 0604791D8Z, Project 122, to identify the most promising technologies and transition pathways
-$2.583 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact
-$26.381 million Department Science and Technology
-$64 million realigned to Service RDT&E and Procurement PEs to fund DoD selected efforts needed to meet operational needs

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	Project (Number/Name) 730 / *Concepts and Capabilities*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
730: *Concepts and Capabilities*	0.000	204.902	182.289	124.353	-	124.353	176.927	180.557	184.426	188.115	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Concepts & Capabilities (C&C) focuses on executing advanced operational prototypes with the joint Services and Combatant Commands (CCMD). C&C validates warfighting concepts and accelerates new capabilities faster than the traditional defense acquisition process. The uniqueness of C&C is in the joint collaboration and the funding flexibility of the Title-10 investment. C&C emphasizes delivering major system components and/or single fieldable systems for joint warfighting application, while informing Service programs of record. The delivery of these operational prototypes are typically within 24 to 36 months.

C&C drives prototyping investments to address the Joint warfighter's most pressing operational capability gaps and accelerates new capability development in conjunction with the joint Services and CCMD. Based on established needs, C&C sponsors joint efforts to mature operational prototypes through approved developmental portfolios. Office of the Under Secretary of Defense for Research & Engineering (OUSD(R&E)) portfolio managers provide government oversight and execute collective development with operational leads from the Service and CCMDs; pool technical resources from the Service research, engineering laboratories, program executive offices; leverage academia and industry expertise as needed; require Service cost-sharing partnerships; and execute the necessary planning steps for future transition early within the developmental life cycle. This execution strategy represents a time-proven catalyst for collaborative development and accelerates delivery of operational prototypes to the joint warfighter. In FY 2023, several efforts transferred from the Joint Capability Technology Demonstration (JCTD) program to the new Defense Innovation Acceleration (DIA) program, as they continue to boost innovation and increase military competitive advantage in the Indo-Pacific area of operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Brutus ***Description:*** Brutus leverages recent technological advancements to provide indication and warning (I&W) and to disrupt adversarial Command, Control, Computing, Communications, Cyber, Intelligence, Surveillance, Reconnaissance, and Targeting (C5ISRT) capabilities. This solution supports Joint Force freedom of maneuver at all echelons. In FY 2023 (last year of funding), Brutus awarded the contract for prototype development. In FY 2024, Brutus will produce, test, and demonstrate a prototype system in an operationally-relevant scenario. Brutus will complete as a project in FY 2024 and transition to a classified Program Executive Office for Intelligence, Electronic Warfare, and Sensors (PEO IEW&S) program in support of improved command and control, data back haul, situational awareness, and exploitation tools.	10.000	-	-
Title: Grandstand ***Description:*** Grandstand leverages recent technological advancements to provide indication and warning (I&W) to U.S. Indo-Pacific Command (USINDOPACOM) Commanders and U.S. Forces in a timely manner and tracking Command, Control,	5.500	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Computing, Communications, Cyber, Intelligence, Surveillance, Reconnaissance, and Targeting (C5ISRT). Additional information is at higher classifications. In FY 2023 (last year of funding), Grandstand tested and demonstrated a prototype system in an operationally relevant scenario for level of effort one (1). In FY 2024 Grandstand will develop and laboratory demonstrate persistent access to threat C5ISRT, demonstrate indication and warning (I&W) capabilities, reduce latency preparatory near real-time data processing capabilities, and identify platform capabilities to access peer competitor C5IRST. Grandstand will complete as a project in FY 2024, transition to the U.S. Navy's Battlespace Awareness and Information Operations (PMW 120), and establish an operational environment with Naval Surface Warfare Command to provide downstream connectivity into Missile Defense Agency (MDA) architecture for I&W and target continuity as well as connectivity into Link-16 and the Integrated Broadcast System for locational updates.			
Title: Iron Quest ***Description:*** Iron Quest leverages recent technological advancements to provide indication and warning (I&W) to U.S. Indo-Pacific Command (USINDOPACOM) Commanders, U.S. Forces and disrupting adversarial Command, Control, Computing, Communications, Cyber, Intelligence, Surveillance, Reconnaissance, and Targeting (C5ISRT) capabilities. Additional information at a higher classification. In FY 2023 (last year of funding), Iron Quest successfully tested, and performed an operational demonstrated prototype system in an operational relevant scenario in fiscal year 2023. In FY 2024, Iron Quest will conduct an operational demonstration and complete as a project, and transition to a classified Program Executive Office for Intelligence, Electronic Warfare, and Sensors (PEO IEW&S) program in support of USINDOPACOM.	4.500	-	-
Title: Joint Targeting Support (JTS) ***Description:*** JTS will reduce the sensor-to-shooter timeline and increase the rate of target identification and engagements by leveraging resources across services, agencies, and coalition partners. JTS will connect sensors, shooters and data across the Services to effectively support targeting cells at all echelons to provide capabilities in support of Joint All-Domain Command and Control (JADC2). JTS will automate Joint target development for deep fires missions by developing and integrating machine learning analytics with Joint- and Service-specific information systems and Intelligence, Surveillance, and Reconnaissance (ISR) networks. JTS will simultaneously build and refine numerous user- and machine-nominated target decks by employing distributed processing and fusion analytics and augmenting the Joint Automated Deep Operations Coordination System (JADOCS) to improve the target development process across echelons and services. In FY 2023 (last year of funding), JTS continued developing user interfaces, software, and correlation of Joint forces data, resulting in a successful technical demonstration. In FY 2024, JTS plans to deliver a fully functioning visualization system, complete an operational demonstration, and conduct a military utility assessment. JTS will transition its software to Project Manager for Intelligence Systems & Analytics (PM IS&A) and the U.S. Navy's Battlespace Awareness and Information Operations (PMW 120) program office.	5.655	-	-
Title: Lucas	4.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Lucas is a cost-effective unmanned prototype in development for deployment at scale. FY 2023 is Lucas' only year of funding. In FY 2024, Lucas will complete as a project and transition to classified U.S. Navy Engineering Logistics Office (NELO) program. Additional information is classified.			
Title: Passive Optical Spectrum Control and Exploitation (POSCE) ***Description:*** POSCE uses innovative sensing methods intended to augment persistent intelligence, surveillance, and reconnaissance (ISR) in maritime environments and along terrestrial chokepoints. Additionally, novel sensing provides penetrating ISR in response to operational challenges in anti-access/area-denial environments. In FY 2023 (last year of funding), POSCE conducted a technical demonstration. In FY 2024, POSCE will conduct an operational demonstration and military utility assessment, and transition the prototypes to Services operating in the U.S. Central Command (USCENTCOM), U.S. Indo-Pacific Command (USINDOPACOM), and U.S. European Command (USEUCOM) areas of responsibility to acquire mission data and demonstrate mission relevance.	2.640	-	-
Title: Payload Prototyping to Support Stratospheric Experimentation ***Description:*** The Stratospheric Experimentation effort includes the development and prototyping of stratospheric payloads that can operate on a variety of high-altitude platforms. In FY 2023, this effort developed prototype payloads for use in stratospheric experimentation, completed reports, and worked with Service leads to transition.	4.400	-	-
Title: Raging Parakeet (RP) ***Description:*** Combatant Commands (CCMD) lack the ability to rapidly analyze vast amounts of Intelligence, Surveillance, and Reconnaissance (ISR) data to quickly locate hard-to-find targets with a high degree of accuracy. RP utilizes advanced artificial intelligence, machine learning algorithms, and sensor fusion to decrease manpower requirements and simultaneously increase the accuracy of high-priority target identification. In FY 2023 (last year of funding), the U.S. Air Force handed over technical lead to the Naval Research Laboratory (NRL). In FY 2024, Raging Parakeet will gather needed data sets, develop an initial set of algorithms, establish open architecture standards, complete standards development, develop a prototype processor based on the project's standards, create fusion and cross-cueing algorithms, perform integration of the payload into the host aircraft, and perform a technical demonstration, an operational demonstration, and a military utility assessment. Raging Parakeet's algorithms will transition to an existing Naval Air Systems Command (NAVAIR) program of record, National Geospatial Intelligence Agency (NGA), and the Chief Digital and Artificial Intelligence Office (CDAO).	5.264	-	-
Title: Reliable Transmission over HF (NORTH) ***Description:*** NORTH focuses on command, control, communications, computers, intelligence, surveillance, and reconnaissance and fully-networked command, control and communications (FNC3) modernization. NORTH integrates the Navy's wideband high	0.489	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
frequency (HF) mesh networking system and the Air Force's digital HF radios and repeaters to optimize joint information transport datalinks based on sense and respond (S&R) of the spectral environment. All three systems combined provide an enterprise solution that increases operational effectiveness of resilient command, controls and communication in anti-access/ area-denial environments. In FY 2023 (last year of funding), NORTH will conduct an operational demonstration after integrating roll-on/roll-off equipment suites on joint Service fixed and mobile platforms. The NORTH project completes in FY 2023.			
Title: Stratospheric Capability Architecture Development (SCAD) ***Description:*** SCAD supports the National Defense Strategy by delivering materiel solutions to the United States Army (USA) and United States Special Operations Command (USSOCOM) for acquisition and sustainment. SCAD develops, demonstrates, and assesses an unmanned aerial systems platform with stratospheric payloads that provide ground moving target indicator synthetic aperture radar, signals intelligence, and communications relay capabilities. In FY 2023, SCAD executed its military utility assessment and transitioned to the U.S. Army and USSOCOM.	2.100	-	-
Title: Aerial Port of the Future (APoF) ***Description:*** Aerial ports and air transportation expeditionary operations are constrained by poorly performing and unlinked Information Technology (IT) systems, outdated command, control, and communications networks, and physical handling of critical classes of supply. To solve these problems, Aerial Port of the Future (APoF) develops, integrates, and tests emerging capabilities at aerial ports by providing a logistics common operating picture for planning, processing, and managing joint force cargo; an integrated automated system to manage personnel, cargo, and munitions; and man/unmanned materiel handling equipment to rapidly load sustainment to global air mobility assets. In FY 2023, APoF completed a spiral for automated systems with portable computing, advanced the spiral for the integration of autonomy and machine learning with advanced data analytics, and conducted technical and limited operational demonstrations. ***FY 2024 Plans:*** In FY 2024, APoF plans to conduct its military utility assessment and transition the automated infrastructure tools, hardware/ software residuals, and robotic material handling equipment systems through Air Mobility Force Center of Excellence to Elmendorf Air Force Base, Alaska; Joint Base McGuire-Dix, New Jersey; Pope Army Airfield, North Carolina; and U.S. Indo-Pacific (USINDOPACOM) expeditionary locations. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** APoF will complete in FY 2024.	4.200	2.750	-
Title: Collaborative Naval Information Warfare Systems Command Cyber Operations (N-Cyber)	0.347	1.500	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: N-Cyber is an offensive capability that enables warfighters to create non-kinetic effects (NKE) on traditionally hard-to-affect adversary systems from air, land, or sea through the integration of space, cyber, and electronic warfare. In FY 2023, N-Cyber completed development of various non-kinetic techniques and executed multiple successful technical demonstrations. ***FY 2024 Plans:*** In FY 2024, N-Cyber plans to conduct operational demonstrations and a military utility assessment in an operationally-relevant environment. Transition is expected to be led by the 16th Air Force and executed through the Air Force Life Cycle Management Center (AFLCMC). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** N-Cyber will complete in FY 2024.			
Title: Enabling Development and Experimentation Focus Area ***Description:*** Project will conclude in FY 2024. Impact to all services and USINDOPACOM. Enables rapid development of technologies identified by ASD(MC) and OUSD(R&E) leadership for inclusion in specified experimentation venues. ***FY 2024 Plans:*** Sponsor and execute rapid development of technologies identified by ASD(MC) and OUSD(R&E) leadership for inclusion in specified experimentation venues in FY 2025. Project will conclude in FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, funding for this focus area decreases to support acceleration of other high priority prototypes addressing the DoD's current priority challenges.	0.000	13.045	-
Title: High-Frequency Silent Transmission over Resilient Mesh (HF STORM) ***Description:*** High-Frequency Silent Transmission over Resilient Mesh (HF STORM) refines the Department of Defense (DoD)'s Fully-networked Command, Control, and Communications (FNC3) and high frequency (HF) roadmaps to mature and layer several key technologies. These developments combine to increase transmission directivity while minimizing detection susceptibility in tactical, relocatable, and expeditionary ground and aerial nodes that link with a large ground-based array to provide global and secure reach in a contested or denied environment. In FY 2022, HF STORM conducted a technical demonstration of ground components. In FY 2023 HF STORM will conduct a second technology demonstration with fully integrated architecture. ***FY 2024 Plans:*** In FY 2024 (last year of funding), HF STORM plans to perform an operational demonstration and military utility assessment and transition the fieldable prototype for integration into current and next generation programs: For the U.S. Army, PRC-160 HF radio	3.800	5.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
software updates and small-scale, tactically-deployable HF hub will transition to U.S. Army Europe and Africa (USAREUR-AF); for the U.S. Marine Corps, the Advantaged Node Processor Array (ANPA) half-duplex repeater prototype will transition to select platform programs of record. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** HF STORM will complete in FY 2024.			
Title: Joint Undersea Surveillance and Targeting (JUST) ***Description:*** JUST will deliver a new capability to monitor changes to the undersea battlespace and seabed infrastructure by demonstrating intelligent autonomous unmanned undersea vehicle (UUV)-enabled target recognition and change detection capability enabling secure Joint Force offensive and defensive operations. Combatant Commands (CCMD) require JUST capabilities for force protection and operational plan execution. In FY 2023, JUST developed and tested automatic target recognition (ATR) and automatic change detection (ACD) capabilities, assessed surrogate UUVs for testing in an operationally-relevant environment, and completed its first technology demonstration. ***FY 2024 Plans:*** In FY 2024, JUST plans to conduct three additional technology demonstrations, an operational demonstration, and a military utility assessment. JUST technologies will then transition to PMS 394 (Naval Sea Systems Command Planned Maintenance Systems), PMS 406 (Advanced Undersea Systems and Unmanned Maritime Systems), and the Office of Naval Research (ONR) Full-Spectrum Undersea Warfare Project. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** JUST will complete in FY 2024.	1.387	4.771	-
Title: Kinetic Calypso ***Description:*** Kinetic Calypso is a late FY 2023 new-start project that will upgrade and extend the operational life of U.S. undersea weapons stockpiles, through novel low-cost employment methods of sea mines and torpedoes capable of delivering deterrent and mission relevant effects in future conflicts. The project's results will support integration of foreign modular minelaying systems into U.S. or partner-nation capabilities and the defense industrial base to complement U.S. Pacific Fleet's (PACFLT) Hellscape concept. ***FY 2024 Plans:*** In FY 2024, Kinetic Calypso will adapt sea mines and torpedos for new applications and will include technical demonstrations of the weapons. ***FY 2025 Plans:***	0.050	9.052	10.527

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Kinetic Calypso will perform at sea demonstrations to establish key performance parameters (KPP), demonstrate kinetic effects, and select upgraded weapons. This project will discontinue under the DIA line and will realign under a Maritime domain functional area in the out years. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, funding for Kinetic Calypso increases to support operational demonstration.			
Title: Logan ***Description:*** Project information at higher classification. ***FY 2024 Plans:*** Logan will transition to Navy Cyber Warfare Development Group (NCWDG). Additional information is classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Logan will complete in FY 2024.	7.000	7.000	-
Title: Maritime Platform ORCAstrate ***Description:*** Maritime Platform ORCAstrate is a late FY 2023 new-start project that will demonstrate and experiment with five novel and affordable maritime platforms that are designed to provide flexible payload delivery from unmanned platforms. Maritime Platform ORCAstrate will support future experimentation in a classified area of operations (AO), complement PACFLT's employment of lethal effects in high-end conflicts at scale, and complicate and degrade an adversary's ability to prioritize and process maritime targets. Maritime Platform ORCAstrate platforms will be equipped with modular common architectures for unmanned surface vehicle navigation controls, sensors, and resilient communications at range or in contested environments. ***FY 2024 Plans:*** In FY 2024, Maritime Platform ORCAstrate will develop command and control systems for the unmanned platforms and will perform technical demonstrations of the platforms at sea. ***FY 2025 Plans:*** In FY 2025 the project will conduct an operational demonstration, produce a technical data package (TDP), test results, hardware for effectors, platform integration equipment, autonomy, sensors, and communications. This project will discontinue under the DIA line and will realign under a Maritime domain functional area in the out years. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, funding for ORCAstrate increases to support operational demonstration.	0.050	7.750	8.250
Title: QuickSink	6.495	2.213	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: QuickSink is developing technologies to reduce the number of air assets required for anti-surface warfare (ASuW) operations by increasing ASuW weapon lethality and standoff while decreasing costs. The program is also using the joint direct attack munition as an inexpensive integration and testing platform for QuickSink technologies. In FY 2023, the program successfully demonstrated the seeker performance in a series of flight tests with inert weapons. ***FY 2024 Plans:*** In FY 2024, QuickSink will complete the operational demonstration and military utility assessment and transition the asset to Air Force Lifecycle Management Center (AFLCMC) Direct Attack Division (EBD) for further development, qualification, and production as a Joint Direct Attack Munition (JDAM) seeker component. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** QuickSink will complete in FY 2024.			
Title: Samurai ***Description:*** In support of Combatant Commands' (CCMD) focus on Denied, Degraded, Intermittent, and Limited (DDIL) communications environments, U.S. Indo-Pacific Command (USINDOPACOM), in partnership with the National Geo-Spatial Intelligence Agency (NGA), has begun a series of experiments focused on the delivery of geospatial intelligence (GEOINT) and intelligence products from the continental U.S. (CONUS), through regional and sub-regional, and down to the tactical operations layer. In FY 2023, as part of USINDOPACOM's DDIL exercise series, NGA collaborated with USINDOPACOM Joint Staff and two theater units to deploy two small form factor hardware sets and one capability subject matter expert to two continents and began the iterative process of identifying mission requirements and capability gaps. Additionally, one theater-level GEOINT asset was deployed outside CONUS in support of inter-theater nodal data dissemination strategy. ***FY 2024 Plans:*** In FY 2024, Samurai will deploy an additional theater-level GEOINT asset and continue additional CCMD DDIL exercises to develop tactical and operational-level GEOINT templates for small form factor hardware leveraging multi-spectral resilient transport and GEOINT organizational intelligence workflow. Samurai will transition as a leave-behind capability through a Memorandum of Agreement (MOA) to a to-be-determined host. An NGA Warfighter Support office will assist and advise the Joint Requirements Oversight Committee (JROC) in requirements determination for robust edge-node development in support of Joint forces and Allied partners in the INDOPACOM area of operations. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Samurai will complete in FY 2024.	8.000	8.000	-
Title: Scout	1.931	2.500	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Scout will build attributable, cost effective, long-distance, autonomous low-profile vehicles to accomplish a variety of missions. The platform will minimize detection from a variety of sensors using low observable attributes. In FY 2023, Scout implemented hardware and software updates and produced other key deliverables for prototype creation. ***FY 2024 Plans:*** In FY 2024, Scout will finalize integration of hardware and software updates and conduct an operational assessment of the integrated systems and kinetic and non-kinetic payloads. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Scout will complete in FY 2024.			
Title: Sea Archer ***Description:*** Sea Archer will hold key fixed military systems at risk at the onset of conflict. Further details of the project are classified. In FY 2023, Sea Archer completed system requirements analysis and development of operating concepts and objectives for the operational demonstration. Sea Archer also completed its first technical demonstration. ***FY 2024 Plans:*** In FY 2024 (last year of funding), Sea Archer will integrate hardware and software aboard the host platform and conduct an operational demonstration and concurrent military utility assessment on an instrumented range. In FY 2025, Sea Archer will transition to the Undersea Weapons Program Office (PMS 404). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Sea Archer will complete funding in FY 2024.	1.750	2.740	-
Title: Signal of Opportunity Receiver (SORcer) Enable Ionospheric Modeling (SEIM) ***Description:*** By fielding SORcer systems in forward operating locations, SEIM delivers necessary high frequency (HF) propagation data to enable operational awareness of the electromagnetic operating environment. Artificial intelligence (AI) and deep neural network (DNN) techniques are utilized to enable autonomous use of SORcer systems to support better targeting and decision-making for the joint warfighter. In FY 2023, SEIM fielded additional SORcer systems in the U.S. Indo-Pacific Command (USINDOPACOM) Area of Responsibility (AOR) and tested and validated SORcer technologies. SEIM also successfully completed its first technical demonstration. ***FY 2024 Plans:***	1.410	1.780	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2024, SEIM will conduct an operational demonstration and complete a military utility assessment. SEIM technologies will transition to the Military Applications of Space Environment (MASE) program of record at U.S. Space Force Space and Missile System Center (USSF SMC). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** SEIM will complete in FY 2024.			
Title: Surface-Launched Advanced Munition Datalink (SLAMD) ***Description:*** SLAMD develops and integrates a tactical projectile data link (PDL) into a gun-launched, maneuvering projectile to enable long-range precision fires in a GPS-denied environment. The data link enables communications between the projectile and a ground-based tracking radar to enable mid-course corrections to the projectile's path. The data link is also an enabler for ground-to-round and round-to-round communications for tactical applications, such as swarming. In FY 2023, SLAMD completed system and subsystem technical requirements generation, initial PDL design and development, PDL interface control document (ICD) development, radar mode design, and assessment metrics development. ***FY 2024 Plans:*** In FY 2024, SLAMD will conduct PDL integration into projectile airframe for initial technical demonstration; complete PDL-to-Radar integration activities, finalize the ICD, and demonstrate Radar-to-PDL communications in a lab environment; develop test documentation and analysis on performance expectations. SLAMD will conduct a final technical demonstration, an in-flight operational demonstration, and a military utility assessment. The SLAMD PDL design and ICD will transition to Program Executive Office (PEO) Missiles and Space and Joint Program Executive Office (JPEO) Armaments and Ammunition. The PDL will also be used in the Strategic Capabilities Office (SCO) Hypersonic Gun Weapons System (HGWS) prototype. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** SLAMD will complete in FY 2024.	2.495	3.886	-
Title: Turul ***Description:*** Turul provides scalable, machine learning-enabled algorithms to find and fix fleeting targets to accelerate kill chain activities against time-sensitive targets. Information from these capabilities provides situational awareness to Combatant Command (CCMD) operators and can be used to tip and cue other sensor systems. Maritime moving target indicator, ground moving target indicator, and air moving target indicator information is needed by the CCMDs in quantities and timelines that are not currently being met by existing means. In FY 2023, Turul planned and executed multiple tabletop and technical demonstrations. ***FY 2024 Plans:***	1.200	1.200	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2024, Turul plans to execute its military utility assessment and transition into a U.S. Space Force (USSF) Space Systems Command (SSC) program of record that utilizes the Global Unification Environment (GLUE), which CCMD Joint Intelligence Operations Centers (JOIC) use. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Turul will complete in FY 2024.			
Title: Autonomous Multi-Domain Launcher (AML) ***Description:*** AML is developing and demonstrating an unmanned, cab-less, highly mobile, C-130 transportable prototype Long-Range Precision Fires (LRPF) launcher. The prototype launcher will be capable of leader-follower autonomy, drive-by-wire, and remote launcher turret and fire control operation. The prototype launcher will also be capable of handling/launching longer munitions (up to 20 feet in length) while remaining compatible with the current Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM) (13 feet in length). In FY 2023, AML successfully completed a reload experiment and plume effects testing. ***FY 2024 Plans:*** In FY 2024, AML will complete final system design, deliver a prototype vehicle, and conduct a live-fire demonstration. ***FY 2025 Plans:*** In FY 2025, AML will transition a developmental prototype and technical data package to the U.S. Army Combat Capabilities Development Command (DEVCOM) Aviation & Missile Center (AvMC). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** AML project costs decrease in FY 2025 as project shifts from development to completion of a comprehensive final report. AML will complete in FY 2025.	3.200	3.000	1.700
Title: Birdseye Yonder (BEYOND) ***Description:*** BEYOND matures and integrates advanced, photonic-based radiofrequency sensors will be integrated into existing U.S. European Command (USEUCOM) sensor networks for signals intelligence. The sensor technology is a 360-degree wideband passive geolocation, track, and target classification capability designed around a novel physically assisted wideband correlator technology. In FY 2023, BEYOND delivered a technical design and receiver hardware for a fixed site receiver. ***FY 2024 Plans:*** In FY 2024, BEYOND will a deliver a technical design for a mobile receiver, the mobile receiver hardware, and complete a technical demonstration. ***FY 2025 Plans:***	2.000	3.000	3.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2025, BEYOND will conduct an operational demonstration and military utility assessment in support of a U.S. Air Force Europe (USAFE) air defense mission.			
Title: Collaborative Artificial Intelligence (AI) for Predicting Enemy Course of Action (ECOA) (CAPE) ***Description:*** CAPE is an Artificial Intelligence (AI)-enabled decision support software for predicting enemy course of action (ECOA). CAPE introduces a unique Decision Centric Architecture (DCA) not currently found in fielded systems and advances symbolic plan recognition, semantic networks, and mixed-initiative reasoning that facilitate human-machine teaming while automating ignorance identification and request for information generation. In FY 2023, CAPE developed a software prototype, reusable software libraries, and a software development kit that accelerated third-party artificial intelligence integration. ***FY 2024 Plans:*** In FY 2024, CAPE plans to conduct a technical demonstration of a software prototype capable of operational use by the U.S. Space Force (USSF). ***FY 2025 Plans:*** In FY 2025, CAPE plans to deploy advanced capabilities to classified systems for military utility assessment. CAPE will transition to the USSF's Space Systems Command (SSC), with initial deployments focusing on the National Space Defense Center (NSDC) and leveraging the existing operational Integrated Solutions for Situational Awareness (ISSA) application tool suite and Development, security, and Operations (DevSecOps) processes to support iterative Joint Worldwide Intelligence Communication System (JWICS) deployments and refinement (approximately three releases per year).	2.000	2.000	2.000
Title: Correlating Order-of-Battle (OB) Movement Patterns for Learned Event Exploitation (COMPLEX) ***Description:*** COMPLEX is artificial intelligence and machine learning software that improves our ability to predict our adversaries' movements and operational activities. COMPLEX will have two main impacts on the Joint Warfighter capability: increasing warning capability against foreign military actions and increasing knowledge of activity patterns within, across, and between foreign units. In FY 2023, COMPLEX expanded the inventory of indicators and warnings support for multiple adversaries' military deployments while continuously updating knowledge databases on enemy deployment tactics, techniques, and procedures. ***FY 2024 Plans:*** In FY 2024, COMPLEX will expand its inventory of indicators and warnings support for multiple adversaries' military deployments while continuously updating knowledge databases on enemy deployment tactics, techniques, and procedures. ***FY 2025 Plans:***	2.100	2.750	2.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2025, COMPLEX plans to harden software and submit for accreditation and coordinate transition to a classified program of record and train users. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** COMPLEX project costs decrease in FY 2025 as project shifts from development to completion of a comprehensive final report. COMPLEX will complete in FY 2025.			
Title: Cross-Service Sensor Netting for Integrated Air and Missile Defense (CSSN) ***Description:*** CSSN is a late FY 2023 new-start project that will enable the distribution of air defense radar measurements between U.S. Army, U.S. Navy (USN), and U.S. Marine Corps (USMC) air defense networks to realize a new aspect of truly integrated air and missile defense (IAMD). CSSN will link the USN's Cooperative Engagement Capability, and, by extension USMC's Cooperative Tracking Network, to Army's Integrated Fire Control Network. The project will culminate with live-fire demonstrations of an Army intercept based on USN radar data and vice versa. ***FY 2024 Plans:*** In FY 2024, CSSN will conduct system integration lab predictive analysis, scenario development, risk assessment, and tactical code integration. ***FY 2025 Plans:*** In FY 2025, CSSN will conduct a live-fire exercise. USN and USMC will provide radar tracking data for an Army surface-to-air engagement of a simulated high-end threat. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Reduction in funding due to the completion of tactical code integration.	0.045	8.015	6.850
Title: HAYFINS ***Description:*** HAYFINS is a ground-based system supporting space and autonomy modernization priorities by fusing protection technologies, artificial intelligence/machine learning, and legacy systems enabling freedom of maneuver in support of multi-domain operations. In FY 2023, HAYFINS completed drafting its Implementation Directive and Management Plan. ***FY 2024 Plans:*** In FY 2024, HAYFINS will design and develop an initial prototype for demonstration and assembly. ***FY 2025 Plans:***	2.963	4.800	5.400

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2025, HAYFINS will complete its final prototype and hardware/software package and conduct a military utility assessment. HAYFINS will transition to the U.S. Army's Program Executive Office for Intelligence, Electronic Warfare, and Sensors (PEO IEW&S). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** HAYFINS project costs increase in FY 2025 as project shifts from development to completion of a comprehensive final report. HAYFINS will complete in FY 2025.			
Title: Joint Radiant Touchstone (J-RTS) ***Description:*** Joint Warfighters require a vulnerability assessment tool designed to enable warfighters with freedom of maneuver and freedom of action. The J-RTS tactical software tool will provide warfighters with freedom of maneuver, function as a key offensive warfare enabler, and provide awareness for disaggregated/disadvantaged users. J-RTS will scale into a Joint Force capability supporting warfighters across all theaters by sharing data as well as planning details once the tool is deployed to theater assets. Further technical details are classified. In FY 2023, J-RTS completed a successful project kick-off and began technology development efforts. ***FY 2024 Plans:*** FY 2024 project schedule and deliverable are classified. ***FY 2025 Plans:*** FY 2025 project schedule and deliverable are classified. J-RTS will transition to the U.S. Navy's Battlespace Awareness and Information Operations (PMW 120) Ship's Signal Exploitation Equipment Increment Foxtrot (SSEE INC F) program of record, as well as a U.S. Space Force (USSF) Space Systems Command (SSC) program of record utilizing a web version of the Integrated Solutions for Situational Awareness (ISSA). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** J-RTS project costs increases in FY 2025 as project shifts from development to completion of a comprehensive final report. J-RTS will complete in FY 2025.	1.200	1.695	1.730
Title: Low-Altitude Future Vertical Take-off and Landing (VTOL) Long-Range Attack Missile (LRAM) ***Description:*** LRAM builds upon L3Harris' Red Wolf air-launched unmanned air vehicle (UAV). Specifically, the C&C project develops a launcher and control interface for vertical takeoff and landing (VTOL) aircraft, kinetic payload, command and control architecture, and a seeker for autonomous over-the-horizon engagements. Most of the aforementioned is extensible to other aircraft, to include unmanned aircraft. This weapon system concept significantly extends the lethal range of VTOL-launched weapons. Moreover, outfitting the VTOL fleet of tactical aircraft (H-1, H-60 series, AH-64, and Joint Future Vertical Lift) with this	2.000	3.000	4.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
weaponized UAV dramatically increases the number of aircraft available for over-the-horizon strike. In FY 2023, LRAM delivered an AH-1Z assessment for software and hardware development and integration requirements. ***FY 2024 Plans:*** In FY 2024, LRAM will refine the digital architecture (seeker and data link), develop a kinetic warhead, and conduct a live-fire test. ***FY 2025 Plans:*** In FY 2025, LRAM will conduct an operational demonstration, finalize a Capability Development Document (CDD), and transition to the AH-1Z helicopter program of record (AH-1Z) and future U.S. Marine Corps' Vertical Take Off and Land Family of Systems (VTOL FoS) at Headquarters, U.S. Marine Corps (HQMC) Capabilities Development Directorate (CDD). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** LRAM project costs increase in FY 2025 for operational flight demonstration, transition planning, and completion of final demonstration report. LRAM will complete in FY 2025.			
Title: Prototyping Development Efforts to Fill Identified Gaps ***Description:*** The Under Secretary of Defense for Research & Engineering (USD(R&E)) and the Assistant Secretary of Defense for Mission Capabilities (ASD(MC)) identified several technology projects for accelerated development to fill identified gaps. These include Technological Readiness Exercise (TREX), Bandit, Blue Shield, Carbon Mine, Contested Logistics (CL) Acceleration, Cyber Shield Coalition, Denied Area Operations (DAO), Diamond Shield Coalition, Familiar Relative, Pacific Ecosystem for Cyber (PeCoC) Acceleration, Sandals, Unmanned Port System (UPS), Joint Explosives and Propellant Prototyping Project (JEP3L), Rapid Employment Explosive Formations (REEF), and various decoys. ***FY 2024 Plans:*** Initiate prototype development in order to participate in future experimentation venues to fill unforeseen Service capability gaps. Additional information can be provided in a classified brief. ***FY 2025 Plans:*** Initiate prototype development in order to participate in future experimentation venues. Additional information can be provided in a classified brief. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, funding for this focus area decreases to support acceleration of other high priority prototypes addressing the DoD's current priority challenges.	62.541	46.482	19.535
Title: Rapid Large Area Clearance (RLAC)	1.800	5.400	4.800

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: RLAC rapidly conducts large area clearance of ports and airfields from multiple explosive threats to enable access, maneuver, and protection for multi-domain operations to ensure that critical air and seaports of debarkation and ground lines of communication are tenable to support joint fires and logistics in contested environments. Specifically, RLAC will develop and integrate autonomous small Unmanned Aerial Systems (sUAS) and Unmanned Ground Vehicles (UGV) equipped with automatic target recognition to rapidly survey, detect, identify, and map both surface and buried unexploded explosive ordnance (UXO), and then use lasers to neutralize sub-munitions at stand-off distances. In FY 2023, RLAC built, integrated, and tested subsystem prototypes; developed standoff neutralization of sub-munitions; and developed cooperative autonomy, target recognition and deep detection. ***FY 2024 Plans:*** In FY 2024, RLAC plans to develop surveying, detection, geolocation/mapping, and identification of all surface targets and further integrate the RLAC platforms with autonomy and communications capabilities. ***FY 2025 Plans:*** In FY 2025, RLAC plans to deliver final prototypes of the sUAS and UGV with autonomy and communications packages; demonstrate survey, detect, identify, and map of surface targets and standoff neutralization of submunition targets with a compact laser system; and deliver decision aid and training materials for an independent assessment. RLAC will transition to Naval Sea Systems Command's PMS-408 (Expeditionary Missions) via the Explosive Ordnance Disposal (EOD) Modernization Program. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** RLAC project costs decrease in FY 2025 as project shifts from development to completion of a comprehensive final report. RLAC will complete in FY 2025.			
Title: Red-Black Integrated Networking for Space Data Transport (RiBN-SDT)	0.050	1.450	4.000
Description: RiBN-SDT is a late FY 2023 new-start project whose dynamic routing is a software-centric solution for resilient information sharing across crypto-partitioned networks, which provides flexibility and extensibility. This solution provides dynamic control of encrypted network clouds and individual data links and flows, enabling dynamic re-routing of information across the “black” network core, agnostic to the original configuration and pathway. ***FY 2024 Plans:*** In FY 2024, RiBN-SDT will generate actionable plans based on requirements review, complete critical design review of the proposed architecture, bench demonstrate technologies, and complete experimentation and data collection to fully validate networking software. Specific deliverables include system design description and experimentation results. This is the basis for			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
the development of the initial airborne and ground router nodes for system demonstration during an operational exercise, e.g. NORTHERN EDGE 2025, RIM OF THE PACIFIC (RIMPAC) 2026. ***FY 2025 Plans:*** In FY 2025, RiBN-SDT will complete building and testing the RiBN-SDT prototypes, design and build the space-airborne-ground prototypes, and complete a military utility assessment to understand joint, large-scale deployment among the Services. Successful demonstration results will determine the specific program office to which the technology will transition, and the U.S. Space Force (USSF) will determine an appropriate acquisition strategy based on which program of record will maintain and sustain the technology. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increased costs due to the demonstration of RiBN-SDT router software on space-rated hardware system.			
Title: Scabbard Dome ***Description:*** Scabbard Dome is a late FY 2023 new-start project that will develop and demonstrate solutions for protecting standoff munition seekers against directed energy (DE) countermeasures and weapons by delivering DE-resilient and "alternative" low-size, weight, power, and cost (SWaP-C) materials for subsonic standoff weapon electro-optical/infrared/radiofrequency (EO/IR/RF) seekers and apertures. This capability will enable uninterrupted and lethal employment of standoff munitions against DE weapons and DE-protected targets. Scabbard Dome will also apply hardening or DE resistance to munitions to increase Department of Defense (DoD) weapon system effectiveness. ***FY 2024 Plans:*** In FY 2024, Scabbard Dome will develop key performance parameters (KPP), conduct baseline testing, and design a DE-hardened seeker. Additional details regarding the project schedule and deliverables are classified. ***FY 2025 Plans:*** In FY 2025, Scabbard Dome will build a prototype and perform hardened seeker validation testing. Additional details regarding the project schedule and deliverables are classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increased costs due to additional technical development and testing.	0.040	1.960	4.750
Title: ShadowCat ***Description:*** This project is part of the fully-networked command, control, and communications problem-set. Further details and descriptions of this project are classified. In FY 2023, ShadowCat completed a successful project kick-off and began technology development efforts.	3.000	1.000	2.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: FY 2024 project schedule and deliverable are classified. ***FY 2025 Plans:*** FY 2025 project schedule and deliverable are classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** ShadowCat project costs increase in FY 2025 as project shifts from development to completion of a comprehensive final report. ShadowCat will complete in FY 2025.			
Title: Spatiotemporal Hybrid Open Optical Terminal for Enhanced Relay (SHOOTER) ***Description:*** SHOOTER is a late FY 2023 new-start project that will address gaps in multi-user secure, low-signature mission data information transport between airborne and Mid- and High-Altitude Platforms (HAP) and “at the halt” ground and expeditionary users. Current implementations of point-to-point free space optics (FSO) technology makes it difficult to aggregate nodes to service multiple users. SHOOTER will demonstrate a network of novel multi-user optical terminals to rapidly connect distributed forces in relevant operational environments. The optical spectrum does not require host nation frequency coordination, and the infrared bands greatly reduce blue force detectability. Access to optical spectrum increases the survivability and lethality of our distributed forces when they are operating in hostile and contested environments. This technology demonstration will accelerate deployment of a multi-user capability by three to five years. ***FY 2024 Plans:*** In FY 2024, SHOOTER will transition current lab-rated terminals to ground-to-ground testing, and develop, test, and demonstrate the terminal acquisition model. This model will acquire and move data between forward air platforms and disaggregated tactical ground users. ***FY 2025 Plans:*** In FY 2025, SHOOTER will iteratively test multi-node data transport and iterate capability for fast switching, while managing underlying dynamics of air platform and distributed ground users at the quick halt. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increased costs due to final risk reduction and military utility assessment in a global integrated exercise.	0.050	1.950	3.000
Title: Special Access Program (SAP) Assimilation and Integrated Operational Management ***Description:*** Continuously-funded effort. This effort is comprised of two execution essentials that support the entire C&C project code: (1) Special Access Program (SAP) Assimilation, and (2) Warfighter Integrated Operational Management. This effort executes a select number of highly-classified projects in areas such hypersonics and counter-hypersonics, time-sensitive	14.200	14.650	14.650

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
targeting, electronic miniaturization, electronic countermeasures, advanced mobile / ad hoc network communications, space situational awareness, cyber, counter-ISR, decoys and deception, and persistence surveillance. This element funds SAP assimilation and synchronization across the Joint prototyping activities to ensure DIA efforts and investments remain fully SAP-informed while maintaining requisite security compliance. Liaising directly with the joint warfighter (e.g., Combatant Commands (CCMD) and Services) on prototype development is paramount to avoid unwanted duplication, propagate collaboration and achieve joint interoperability. ***FY 2024 Plans:*** Provide integrated operational management with joint Service and CCMD direct participation in shaping and executing operational prototypes. Sponsor and execute projects selected by the ASD(MC) and OUSD(R&E) leadership that are fully SAP-informed and synchronized. FY 2024 amount is a current estimate, but the actual amount will ebb and flow based on the number of projects identified in year of execution and their funding profiles in the out-years. ***FY 2025 Plans:*** Continue providing integrated operational management with joint Service and CCMD direct participation in shaping and executing operational prototypes. Sponsor and execute projects selected by the ASD(MC) and OUSD(R&E) leadership that are fully SAP-informed and synchronized. FY 2025 amount is a current estimate, but the actual amount will ebb and flow based on the number of projects identified in year of execution. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding stays consistent between years.			
Title: Unmanned Logistics Systems for Semi-Submersibles (ULS/SS) ***Description:*** ULS/SS is a late FY 2023 new-start project that will deliver an advanced low-cost, covert Joint Force logistics transport vehicle with cargo handling capability that provides tactical mobility and critical resupply from ship-to-shore and inter-island distribution networks beyond the Weapons Engagement Zone (WEZ), which is essential to executing Expeditionary Advanced Base Operations and Distributed Maritime Operations. ULS/SS will build upon previous phased low-profile vessel (LPV) efforts to develop, integrate, and test the Material Handling Equipment (MHE) required for transloading (loading/offloading) efficiently and effectively in austere environments and locations. ULS/SS will also develop or adopt ancillary equipment to transport large, heavy payloads from an afloat craft to the shore. ***FY 2024 Plans:*** In FY 2024, ULS/SS will develop MHE and unloading concepts and build prototypes and interfaces. ***FY 2025 Plans:***	0.050	3.950	5.300

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2025, ULS/SS will integrate MHE into the craft, demonstrate ship-to-shore capability, and conduct developmental testing and fleet exercises. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increased costs due to the construction of prototypes and interfaces.			
Title: Satellite Communications (SATCOM)-Assured Narrowband for Department of Defense (DoD) Devices (SAND2) ***Description:*** SAND2 is a late FY 2023 new-start project that is a scalable, low-latency communications to legacy ultra-high frequency (UHF) SATCOM user equipment (UE), Weapon Data Links (WDL), and next-generation low-size, weight, and power (SWaP) weapon system UE. SAND2 will enable Direct-to-DoD-Device low-latency connectivity and increased capacity for shared situational awareness and command-and-control across domains in rapidly changing threat environments. Additional project details are classified. ***FY 2024 Plans:*** In FY 2024, SAND2 will develop an Implementation Directive, Management Plan, and initial system design requirements. ***FY 2025 Plans:*** In FY 2025, SAND2 will initiate flight software and ground system hardware integration activities and develop an experimentation plan for space flight demonstration.	0.000	4.000	4.000
Title: Concepts & Capabilities (C&C) Portfolio Development Initiatives (PDI) ***Description:*** Continually-funded effort. This funding allocation is to provide future funding for in- and out-year new-start C&C projects. Through the C&C Portfolio Development Initiatives (PDI) effort, OUSD(R&E) sponsors efforts to address the Department's most pressing operational capability gaps and accelerate new capability development in collaboration with the Joint Services and Combatant Commands (CCMD). OUSD(R&E) executive leadership will endorse and make final recommendations for Congressional approval in accordance with H.R. 2617, Consolidated Appropriations Act, Section 8061. Selected projects leverage multicomponent agencies within the global research and engineering enterprise, to include government labs and integration agents, depots, academia, and commercial defense industrial base (DIB) providers. As provided by the ASD(MC), operational prototyping activities utilize best practices to satisfy joint and crosscutting needs and work collectively to streamline transition and scale-up into joint Service acquisition systems where appropriate. Current developmental portfolios are designed for, but are not limited to, addressing critical capabilities gaps in battle-space management; cyber; command, control, communications, computers, cyber, intelligence, surveillance, reconnaissance, and targeting (C5ISRT) and Counter-C5ISRT; resilient communications; unmanned and autonomous systems; deception and decoys; electronic warfare and sensors; weapons and platforms; space-based capabilities; and logistics and sustainment. This fiscal year's funding includes several projects submitted in a Congressional new-start report. Projects identified for funding this fiscal year will be included on future R2 exhibits	0.000	0.000	16.861

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
while projects that are more than the $5M threshold will be included in congressional new start notification packages. In future fiscal years, this report will be submitted earlier in the fiscal year and include those projects. ***FY 2024 Plans:*** Develop and shape future projects into approved C&C developmental portfolios; sponsor and invest in advanced prototyping activities as new-starts that support the NDS and USD(R&E) priorities. ***FY 2025 Plans:*** Continue developing and shaping future projects into approved C&C developmental portfolios; sponsor and invest in advanced prototyping activities as new-starts that support the NDS and USD(R&E) priorities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase reflects that FY 2025 projects have not yet been approved. Once Congressionally approved, they will be included as separate projects on future R-2 exhibits.			
Accomplishments/Planned Programs Subtotals	181.902	182.289	124.353

	FY 2023	FY 2024
Congressional Add: High-Altitude Optical Reconnaissance Unit and Sensor (HORUS) ***FY 2023 Accomplishments:*** HORUS is a prototype electro-optical/infrared system incorporating a modular open system architecture to provide an adaptable and evolvable capability. The HORUS prototype supports day or night operations providing multi-spectral, high-definition full motion video from extreme slant ranges. Specific activities and demonstrations will be finalized within the year of execution. This technology area is a Congressional interest item and additional resources were provided above the President's budget.	20.000	-
Congressional Add: Open-Source Intelligence (OSI) ***FY 2023 Accomplishments:*** This project continues development and transition of the Open-Source Supply Chain Analytics Resource (OSSCAR) project. OSSCAR develops a capability that enables planners and operators to rapidly analyze and leverage open-source supply chain data to adapt to a dynamic operational environment. Quickly accessing and assessing publicly available information provides insights for developing distribution and sustainment courses of action and allows for vetting critical suppliers to U.S. or adversary supply chains. Specific activities and demonstrations will be finalized within the year of execution. This technology area is a Congressional interest item and additional resources were provided above the President's budget.	3.000	-
Congressional Adds Subtotals	23.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 730 / *Concepts and Capabilities*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Upon project closeout, a C&C project has three possibilities:

1) Transition as Capability Delivery (Operational Prototype)
- To a new or existing Program of Record
- As a residual leave behind for immediate operational use
- Or both

2) Transition as Capability Enabler (Developmental Prototype)
- Informs further acquisition programs and/or requirements development

3) No Transition
- Requirements change or no longer valid
- Did not meet deliverables as planned

The integrated management team on a C&C project includes an operational manager from a CCMD, a technical manager from Service research and engineering labs, and a transition manager from a program executive office. This ensures that transition is planned for throughout the lifecycle of the project.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	Project (Number/Name) 731 / *Innovation and Modernization*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
731: *Innovation and Modernization*	0.000	80.000	74.821	41.445	-	41.445	44.338	67.748	67.797	70.640	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Innovation and Modernization (I&M) focuses on addressing the DoD's current priority challenges in near real-time, through innovation discovery and leap-ahead prototyping. Activities include early exploration of low-cost potentially game-changing technologies and concepts, harnessing non-traditional performers and small business innovation to address DoD modernization and capability challenges. I&M acts as an innovation accelerator by funding discovery efforts and the development of prototypes to identify and mature solutions for joint capability gaps. I&M supports DoD modernization through multi-year projects with targeted technology and capability thrusts that are identified, selected, and executed within the year of execution. These efforts support technology maturation and lead to transition through partnerships with Services, Combatant Commands (CCMDs), and other defense agencies to enable effective, affordable, and critically needed early-stage prototype technologies. I&M achieves this through a tailored execution model that:

• Creates an innovation pipeline to support key experimentation and transition efforts, such as the Rapid Defense Experimentation Reserve (RDER), targeting Department priorities and capability gaps
• Is informed by Department-level strategies and priorities including the National Defense Strategy, Joint Warfighting Doctrine, CCMD priorities, and the OUSD(R&E) critical technology areas
• Leverages and coordinates innovation from all sources, including Service laboratories, Federally Funded Research and Development Centers (FFRDCs)/University Affiliated Research Centers (UARCs), the defense industry, small businesses, non-traditional performers, and academia
• Responds rapidly with the ability to identify and fund prototypes within the year of execution to accelerate the rate of innovation and address emerging opportunities and threats
• Leverages Service, defense agency, and industry investments through partnerships that share risk and increase alignment with OUSD(R&E) priorities
• Incorporates transition sponsor participation during project development, prototyping, and evaluation

With funds available throughout the year of execution, I&M enables the OUSD(R&E) to identify, accelerate, and rapidly transition innovation from all sources that otherwise would not be realized through traditional research and development pathways. This execution model causes I&M to lag traditional RDT&E obligation and execution benchmarks, however, since inception I&M has achieved an unbroken 100% obligation rate. Accordingly, I&M can be responsive and flexible to the DoD and joint warfighter needs, supporting rapid prototyping to meet immediate capability needs or game-changing technologies that maintain technological superiority and create enduring change.

I&M's focus on innovation discovery with a flexible execution model allows for rapid innovation through new technology and capability thrusts supported by joint and interagency partnerships with clearly defined milestones and risk reduction. Prototyping efforts are identified throughout the year by leveraging engagements with industry, Service laboratories, FFRDCs, and other innovation centers. Individual projects generally span 12 to 24 months, typically at a cost of less than $2.000 million.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Eris ***Description:*** This project rapidly prototyped and tested a novel, low-cost concept to enhance Joint Force resilience in the presence of modern threats. In FY 2023, prototype integration and system validation were completed prior to a late FY 2023 field demonstration in an operationally relevant environment. The developed capability transitioned to the U.S. Air Force. Additional details are classified.	3.550	-	-
Title: Joint All Domain Operational Tool Suite (JADOTS) ***Description:*** This project developed a capability through the integration of several software tools to enable analysis and planning of kinetic and non-kinetic fires for multi-domain operations (MDO) effects through the production and visualization of convergence packages. In FY 2023, JADOTS achieved initial authority to test and participated in three exercises: Project Convergence 21, Balikaton, and Northern Edge 2. A prototype mobile command post was delivered. JADOTS expanded to additional units and operators in the U.S. Army and U.S. Marine Corps (USMC) to capture new and unique MDO requirements before final transition to an Army Futures Command program of record.	1.300	-	-
Title: HITS ***Description:*** This project prototyped and demonstrated a novel detection and tracking capability for military targets. In FY 2023, modeling and simulation (M&S) assessed target detection dependent on size, velocity, and orientation. Subsequent data collection activities in relevant environments further refined M&S predications. Work continues in FY 2024, using FY 2023 funds, to execute a real-time demonstration of the prototype capability in an operationally relevant environment prior to transitioning the developed capability to a DoD partner. Additional details are classified.	2.067	-	-
Title: Big Blue ***Description:*** This is a classified program. Additional information is available upon request.	1.000	-	-
Title: Void Walker ***Description:*** This is a classified program. Additional information is available upon request.	4.900	-	-
Title: Echelon ***Description:*** This project developed a common digital twin technical framework capable of supporting a wide variety of military radio frequency (RF) systems. Echelon supports virtual testing of digital twin prototypes in a highly accurate, physics-based simulated operational environment, enabling the DoD to evaluate the effectiveness of prototype systems or subsystems in realistic environments and against red threats early in the development phase. The developed high-fidelity, multi-physics framework	4.800	2.300	-

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Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
enables Service research and acquisition programs to mature digital twin prototypes prior to purchasing extensive hardware, enabling programs to shorten the development lifecycle of current system upgrades and next generation systems. This effort includes the hardware and software implementation of the first instantiation of the Echelon technical framework. In FY 2023, the Echelon framework was further matured to support identified additional RF-based DoD missions, along with a method to validate the mature framework. ***FY 2024 Plans:*** In FY 2024, work continues to complete validation and execute a multi-function demonstration of multiple RF digital twins performing their respective RF mission, operating simultaneously, and interacting within the same high-fidelity multi-physics environment. At the end of FY 2024, Echelon transitions to the U.S. Air Force and U.S. Army. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Efforts conclude at the end of FY 2024 with the developed capability transitioning to the U.S. Air Force and U.S. Army.			
Title: Dawson ***Description:*** This is a classified program. Additional information is available upon request. ***FY 2024 Plans:*** This is a classified program. Additional information is available upon request. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Efforts conclude at the end of FY 2024 with the developed capability transitioning to classified partners.	0.750	1.000	-
Title: Beckett ***Description:*** This is a classified program. Additional information is available upon request. ***FY 2024 Plans:*** This is a classified program. Additional information is available upon request. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Efforts conclude at the end of FY 2024 with the developed capability transitioning to classified partners.	1.000	0.650	-
Title: Autonomous Low-Profile Vessel (ALPV) ***Description:*** This project designs, develops, and tests an autonomous maritime semi-submersible logistics platform prototype capable of transporting up to a 10-ton payload across large distances of the ocean with minimal visibility and possibility of detection. The low-profile and low-cost platform provides an innovative logistics solution to support Joint Forces in an austere location. In FY 2023, ALPV prototypes were constructed and completed developmental testing and evaluations by the U.S.	3.665	0.450	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Navy. The USMC conducted limited operational experimentation in the U.S. Southern Command (USSOUTHCOM) Area of Responsibility (AOR) at the end of FY 2023. ***FY 2024 Plans:*** FY 2024 plans include final enhancements of the prototypes for autonomy and sea worthiness, with the final craft capable of demonstrating long range, unattended, logistics resupply as part of a Fleet Exercise or other specifically designed joint experiment with U.S. Indo-Pacific Command (USINDOPACOM). Following demonstrations, the systems will transition to the USMC, with applicability to U.S. Navy and U.S. Army needs. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Efforts conclude at the end of FY 2024 with the developed capability transitioning to the U.S. Marine Corps.			
Title: Artemis ***Description:*** Artemis develops and demonstrates a sensor package optimized for high-altitude operations. These sensors are packaged to minimize size, weight, and power (SWaP) requirements within a single multi-function stratospheric capable package. In FY 2023, activities included continuing the design and fabrication of the Artemis prototype. ***FY 2024 Plans:*** In FY 2024, activities include testing and demonstration of the Artemis multi-function RF sensor package on a surrogate fixed-wing aircraft prior to a performance demonstration during stratospheric flight. Following demonstration, the multi-function RF sensor package transitions to the U.S. Army for qualification testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Efforts conclude at the end of FY 2024 with the developed capability transitioning to the U.S. Army.	2.600	1.350	-
Title: Advanced Tactical Communications (ATC) ***Description:*** Leveraging novel technologies, the ATC project develops a low SwaP communications capability that operates outside of the traditional RF spectrum. The developed capability provides up to a 100-fold increase in communication bandwidth enabling new and novel warfighting capabilities on SwaP constrained platforms such as tactical ground vehicles and small-unmanned aerial systems. In FY 2023, sub-component maturation and system development continued. Development of an early prototype led to a field demonstration in late FY 2023 to validate performance. ***FY 2024 Plans:***	1.625	1.575	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 plans include final refinement of the prototype subsystems, followed by manufacturing, integration, and testing of the final prototype. The ATC project culminates in a final test and evaluation of the integrated prototype in an operationally relevant environment before transitioning to the U.S. Army. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Efforts conclude at the end of FY 2024 with the developed capability transitioning to the U.S. Army.			
Title: Extended Range Threat Detection ***Description:*** This project provides the ability to engage advanced threats at greater ranges through software enhancements. These software upgrades significantly increase tracking range providing an improved capability for advanced defense. In FY 2023, the project began work on the initial development of upgrades to enable radar to accept and process a track cue from a long-range sensor. Additional details are classified. ***FY 2024 Plans:*** In FY 2024, the project will continue to refine capabilities, begin drafting Concepts of Operations (CONOPS), and complete development in preparation for final testing at two field demonstrations before transitioning to the U.S. Army. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Efforts conclude at the end of FY 2024 with the developed capability transitioning to the U.S. Army.	2.000	2.000	-
Title: Counter Communications, Detection, Reconnaissance, and Engagement (CCoMMoDoRE) Focus Area ***Description:*** CCoMMoDoRE focuses on emerging capabilities to exploit weaknesses and degrade capabilities in adversary communications and sensor web networks, leveraging technology innovation from small businesses and non-traditional performers. Projects provide the architecture to ensure allied access, deny enemy use, and enable future capabilities for spectrum dominance. In FY 2023, I&M selected, executed, and transitioned multiple CCoMMoDoRE projects, including: • Ragnar: This project matured a multi-function radio frequency (RF) system concept leveraging commercial-off-the-shelf (COTS) components, along with advancements in RF technology to drive innovation and deliver a low-cost, modular capability to the U.S. Army. Details about the functionality and application of Ragnar are classified. In FY 2023, market research was completed, and the concept matured prior to transition to the U.S. Army for further development. • Identity Warrior: This project leverages advances in optics, cloud computing, and artificial intelligence/machine learning (AI/ML) to passively capture and analyze human signatures at a distance. Identity Warrior screens individuals against known adversaries in real-time and provides automated reporting of significant events on existing Android computing platforms used throughout the Joint Force. In FY 2023, the project completed integration of optics, cloud computing, and AI/ML to passively capture human	3.192	0.230	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
signatures at extended distances and generated automated reporting through ATAK mission planning and situational awareness core capabilities. ***FY 2024 Plans:*** In FY 2024, I&M intends to complete execution and transition the following CcoMMoDoRE project: • Identity Warrior: The project completes operational assessments with end users prior to transition to the U.S. Army, USMC, and U.S. Special Operations Command (USSOCOM) in FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Respective efforts conclude at the end of FY 2024.			
Title: Disruptive Technologies through Novel Additive Manufacturing (NAM) Focus Area ***Description:*** NAM enables on-demand production of critical parts and supplies for deployed units that augment platforms, weapons, sensors, and other solutions to modernization challenges. Targeted investments accelerate capabilities to the warfighter and realize new disruptive technologies through low cost, rapid innovation, leveraging technology innovation from small businesses and non-traditional performers. In FY 2023, I&M selected, executed, and transitioned multiple NAM projects, including: • 3D Printed Radiation Shielding of Electronic Components: This project investigated and developed a novel approach to mitigate radiation damage to microelectronic systems in extreme environments using unique additive manufacturing techniques. The project enables the DoD to integrate COTS electronics into emerging space systems at a significant SwaP advantage. In FY 2023, the project successfully manufactured radiation shielding materials that were tested for performance against proton, gamma ray, and heavy ion induced damage. This dataset was used to outline design rules for space systems travelling in low Earth orbit trajectories. Development of the prototype capability continues in FY 2024, using FY 2023 funds, to model the performance of the shielding materials for medium Earth orbit and geostationary orbit trajectories before transitioning to DoD and interagency partners. • Arctic Grid Energy Storage (AGES): This project developed and demonstrated a battery storage and tactical generator microgrid capability that meets critical operational requirements in extreme cold weather environments; emphasizing scalable, flexible, and high-power quality for continuous and high-energy demands. In FY 2023, preliminary, interim, and detailed design reviews were completed; final designs were provided; and operational testing was completed. Work continues in FY 2024, using FY 2023 funds, to deliver and demonstrate a hybrid operational energy microgrid at the Alaska Cold Region Research and Engineering Laboratory (CRREL) site during a North American Aerospace Defense Command (NORAD) and U.S. Northern Command (USNORTHCOM) field exercise, and for testing at the New Hampshire CRREL site. Final transition occurs in FY 2024 to NORAD, USNORTHCOM, Army Futures Command, and Army North (ARNORTH).	9.851	1.200	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Intelligent Sensing for Remote and Field Care: This project prototyped an innovative ultrasound imaging system to enhance small unit medical self-sufficiency at the tactical edge in support of future distributed warfighting concepts. These concepts involve units separated by large geographic distances and operating in austere environments with area denial challenges, which necessitate the need for intelligent medical devices that support trauma care in the field. In FY 2023, the project focused on designing and maturing the prototype. The hardware components were received, and the project completed initial testing and design fabrication prior to transitioning to the Trauma Care in a Rucksack (TRACIR) project under USSOCOM, with the Joint Services identified as initial users. • Tactical Microgrid Standard Environmental Control Unit (TMS ECU): This project developed a TMS compliant controller for ECUs enabling networked capability to optimally operate heating and cooling equipment, reducing power demand and fuel consumption. In FY 2023, remote control of the ECU was demonstrated utilizing the TMS and the control algorithm design for the microgrid controller and the microgrid dashboard design were completed. Development work continues in FY 2024, using FY 2023 funds, concluding with a final demonstration before transitioning to the U.S. Army Program Manager Expeditionary Energy and Sustainment Systems (PM E2S2) to inform future procurement of ECUs and other smart TMS loads. • Small 3D Printed Unmanned Aerial Vehicles (UAVs): This project develops a low-cost UAV utilizing a low-cost sensor array, COTS parts, and 3D printing to reduce cost. In FY 2023, the project focused on reducing risk for the guidance capability and demonstrating range and sensing. In FY 2024, using FY 2023 funds, the project will focus on end-to-end development and high-fidelity sensing before transitioning to DoD partners. • AM-Enhanced Lattice Castings: This project uses distributed desktop-scale additive manufacturing to create casting patterns, deploy casting methodologies, and generate large-scale intricate lattice-enhanced design concepts. In FY 2023, sub-scale, multi-segment, lattice-enhanced cast engineering articles were successfully designed, segmented, additively manufactured, cast, and tested at relevant experimental conditions. Work continued in FY 2024 before transitioning to the Defense Threat Reduction Agency (DTRA). ***FY 2024 Plans:*** In FY 2024, I&M intends to complete execution and transition the following NAM projects: • AM-Enhanced Lattice Castings: In FY 2024, full-scale castings will be produced and tested to demonstrate scale-up, cost metrics, and performance targets before transitioning to DTRA for manufacturing large-scale, advanced concepts in mission critical applications. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Respective efforts conclude at the end of FY 2024.			
Title: Resilient Position, Navigation, and Timing (PNT) to Support DoD Modernization Needs Focus Area	11.325	4.250	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Resilient PNT develops new capabilities for alternative PNT to ensure and enhance situational awareness in contested environments. Projects explore technologies and capability concepts through platforms, command networks, and soldier systems, to extend the range of control and protect front-line warfighters and allies. Resilient PNT leverages technology innovation from small businesses and non-traditional performers. In FY 2023, I&M selected, executed, and transitioned multiple Resilient PNT projects, including: • JUNU: This project developed an innovative electronic-warfare capability to existing ground, air, and maritime platforms mitigating current and future battlespace PNT challenges. In FY 2023, additional U.S. Army platforms were identified as transition partners and multiple operational demonstrations were achieved solidifying future opportunities to fulfill multiple mission needs and operational deficiencies. JUNU transitioned to U.S. Army, U.S. Air Force, U.S. Space Force, and U.S. Navy platforms. • Polar Skywave Radar (PSR): This project matured RF hardware and advanced radar processing algorithms to validate that over-the-horizon skywave radar is viable for a future surveillance system in the polar region. PSR focused on ten major tasks to extend skywave radar to the polar region, including deploying high frequency (HF) radar hardware for a scaled model and refining signal processing techniques. In FY 2023, PSR completed additional data collections to assess the seasonal ionospheric conditions and their impact on performance. PSR transitions into the NORAD/NORTHCOM Northern Approaches Surveillance system which includes an over-the-horizon radar network funded by the United States and Canada. • Expeditionary Accurate Tactical (EXACT): This project develops a low-SWaP software defined capability to provide accurate, robust, and reliable PNT information. In FY 2023, EXACT development continued with integration of the software and hardware into a functioning prototype with developmental testing in a controlled laboratory environment. The prototype transitioned to the U.S. Army's Joint Program Executive Office Armaments & Ammunition (JPEO A&A) for continued maturation and integration throughout FY 2024 finalizing in a demonstration in an operational environment before subsequent transition to existing planned warfighter capabilities. Additional details are classified. • Advanced Position, Navigation and Timing (APNT): This project accelerated development and matured components of a modular, agile, and reprogrammable APNT capability. The system provides a robust and secure PNT solution in GPS degraded or denied environments. In FY 2023, the system was integrated into a laboratory test architecture and assessed to verify operation in relevant environments prior to transition into a U.S. Air Force Life Cycle Management Center (AFLCMC) Program of Record. • Low-SWaP Anti-Jam Antenna (AJA) for Navigation Systems: This project miniaturizes existing anti-jam (AJ) technology into a dismounted form factor and integrates the unit with current and future dismounted GPS systems. The effort leverages an existing government-owned AJ design applicable for U.S. Army ground assured PNT systems and advances this design while reducing overall cost and SWaP. In FY 2023, the project integrated the antenna algorithm onto an ultra-low power field programmable gate array (FPGA) and adopted an AJ algorithm for simultaneous L1/L2 GPS frequencies. Development of the prototype capability			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
continues in FY 2024 with final transition to the U.S. Army's C5ISR Center Soldier Integrated Position, Navigation, and Timing (PNT) Science and Technology (S&T) project in support of the Dismounted Assured PNT System (DAPS) program of record. • Modular Autonomous sUAS Swarm Delivery System (MASS-DS): This project provides a versatile set of domestically produced, AI-enabled, low-cost, attritable, small, unmanned aircraft systems (UAS) capable of being deployed in large numbers from a variety of crewed and un-crewed platforms and survivable in GPS/communications denied environments in order to perform intelligence, surveillance, and reconnaissance (ISR) tasks. In FY 2023, prototypes of two integrated MASS-DS airframes were developed and underwent initial testing to validate the core performance of the low-cost hardware and software in anticipation of technology evaluation at a FY 2024 Office of the Under Secretary of Defense (OUSD) Technology Readiness Exercise (TREX). Development of the prototype capability continues in FY 2024 with final transition to the U.S. Air Force Special Operations Command (AFSOC) sUAS System Program Office (SPO). • PNT Chain: This project seeks to deliver assured PNT to networked subscribers. The project creates and demonstrates a prototype system-of-systems, consisting of unique hardware executing novel algorithms that delivers assured PNT. In FY 2023, the project successfully created a system-of-systems prototype deployed with novel PNT algorithms. Development of the prototype capability continues in FY 2024 with final transition to multiple Services. • RASCAL: This project developed a novel, exportable system to enable small UAS to navigate to points of interest in denied and degraded environments using alternative means of navigation. Work continues in FY 2024 before transitioning to the US. Army. Additional details are classified. ***FY 2024 Plans:*** In FY 2024, I&M intends to complete execution and transition the following Resilient PNT projects: • Low-SWaP Anti-Jam Antenna (AJA) for Navigation Systems: Development of the prototype capability continues in FY 2024 through miniaturization of the antenna to a hand-held form factor; integration of the antenna with the GPS receiver; and preparation for the PNT Assessment Exercise (PNTAX) 24 field event before transitioning to the U.S. Army. • Modular Autonomous sUAS Swarm Delivery System (MASS-DS): Development of the prototype capability continues in FY 2024 where the MASS-DS airframes will be evaluated at an OUSD TREX event and an Air Force Special Operations Command (AFSOC) test event series prior to transition to AFSOC sUAS SPO. • PNT Chain: Development of the prototype capability continues in FY 2024 with testing and assessment of the prototype on progressively larger scales. The project will focus on delivery, deployment, and testing of novel algorithms for transition to multiple Services. • RASCAL: Prototype development continues in FY 2024 before transitioning to the US. Army. Additional details are classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Respective efforts conclude at the end of FY 2024.			
Title: Reversible Effects for Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) Focus Area	9.495	2.800	-
Description: Reversible Effects for C5ISR focuses on non-kinetic effects for denying and/or degrading the C5ISR capabilities of an adversary, leveraging technology innovation from small businesses and non-traditional performers. Projects mature technologies and future capability concepts by developing platforms, sensors, and communication architectures that explore new or improved methods for denying and/or degrading adversary C5ISR capabilities. In FY 2023, I&M selected, executed, and transitioned multiple Reversible Effects for C5ISR projects, including: • Automated Network Inference and Fusion: This project modernized how data is acquired and processed from diverse sources to build comprehensive and authoritative network depictions for effects-based analyses and precision options. In FY 2023, the project delivered an automated software capability to the Joint Warfare Analysis Center and streamlined processes for carrying out analyses in order to reduce analyst burden, speed-up network build throughput, and improve solutions provided. Work continues in FY 2024, using FY 2023 funds, to enhance the software capability by refining analysis tools, improving robustness and user experience, and adding additional features as directed, before transitioning to the U.S. Air Force for operational use. • Kestrel: This project develops and demonstrates critical technology prototypes for enhanced undersea situational awareness for the U.S. Navy. In FY 2023, the principal components of the technology were developed and demonstrated. The components were integrated into intermediate form factors, and some components were used operationally. Work continues in FY 2024, using FY 2023 funds, to integrate individual technology components into their final form factor with a demonstration in an operationally relevant environment before final transition to a USSOCOM Program of Record. Additional details are classified. • USSOCOM Ignite Innovation: This annual program is a low-cost innovation accelerator that combines the ingenuity and out-of-the-box thinking of military students, and the deep technical expertise of professional researchers, with real-world military problems curated by USSOCOM. Military students from multiple universities work together to develop prototype solutions to relevant challenges like drone autonomy, sensor and data fusion, tactical route planning, resource allocation, and casualty care at the tactical edge. Development of prototypes occurred in FY 2023 with final transition into operational capabilities. • Athena: This project matured a radio frequency system to address modern threats. In FY 2023, prototype integration and system validation were completed prior to demonstration in an operationally relevant environment. The developed capability transitioned to the U.S. Army. Additional details are classified. • Distributed sensing from Air, Ground, and Naval platforms (DRAGON): This project develops a cost-effective solution for incoming threat detection by incorporating advancements across multiple technology focus areas including improved infrared sensors, machine learning, and edge processing. Development of the prototype continued in FY 2023. Prototype development continues in FY 2024 with final transition to the U.S. Navy and U.S. Marine Corps. Additional details are classified.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• CHROMATIC BUGLE: This project develops a modular payload for unmanned undersea systems. Development of this capability will complete in FY 2025 with transition to the U.S. Navy to inform the design of future DoD systems. Additional details are classified. ***FY 2024 Plans:*** In FY 2024, I&M intends to complete execution and transition the following Reversible Effects for C5ISR projects: • Distributed sensing from Air, Ground, and Naval platforms (DRAGON): Development and evaluation of the technology in a relevant environment continues in FY 2024 prior to transitioning to the U.S. Navy and U.S. Marine Corps. Additional details are classified. • Low-Cost Precision Delivery: This project develops a low-cost precision delivery capability with a modular, multi-purpose payload carrier for a variety of operational use cases. In FY 2023, using FY 2022 funds, initial prototype development occurred, including prototype aerial delivery, custom hardware flight demonstration, and user interface development. In FY 2024, initial prototype testing and demonstration will take place with end-user observation before transitioning to USSOCOM. • CHROMATIC BUGLE: In FY 2024, this project continues to develop a modular payload for unmanned undersea systems, before transitioning in FY 2025 to the U.S. Navy. Additional details are classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Respective efforts conclude at the end of FY 2024.			
Title: Tactical Edge Kill Chains (TEK-C) Focus Area ***Description:*** TEK-C augments weapons/fires by improving the speed, precision, and reliability of fire support and kill chain capabilities. Projects leverage opportunities to rapidly mature and demonstrate advanced weapon systems through targeted prototyping of key enabling technologies, including technologies and capability concepts to enhance the lethality of the joint force, reduce the time to make critical decisions, autonomously distribute tasking and orders, and protect warfighters through increased use of intelligent networks, autonomous sensing platforms, and human-machine collaborative systems. TEK-C leverages technology innovation from small businesses and non-traditional performers. In FY 2023, I&M selected, executed, and transitioned multiple TEK-C projects, including: • Automated Joint Terminal Attack Control Message Exchange (AJME): This project designed and developed a prototype software that automates the exchange of specific messages across joint systems using government off-the-shelf (GOTS) standards and technologies, improving the clarity and speed of communications necessary for coordinated fires support. Development of the technology continued in FY 2023 with transition to the U.S. Air Force and U.S. Army for future refinement in FY 2024.	16.880	2.020	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Perched Mantlet: This project developed an unattended ground sensor prototype to detect low and medium altitude threats. Prototype development continued in FY 2023 with final transition to DoD partners. Additional details are classified. • Intelligence, Surveillance, Reconnaissance, and Targeting (ISRT): This project developed a laser target designator for integration onto a small form factor gimbal to support ISR and targeting missions. This effort reduced the size, weight, and power (SWaP) of the gimbal to enable precision fires while conducting ISR missions with a small unmanned aerial system (s-UAS). Prototype development continued in FY 2023, with the initial targeting system undergoing operational testing and evaluation to ensure the advances in optical systems are compatible with s-UAS platforms. The project identified additional functionalities to provide enhancements to the gimbal that would improve the operators targeting capabilities. The project concluded with the developed capability transitioning to USSOCOM and the Joint Services for integration. • Aided Target Recognition (AiTR): This project accelerates the development and demonstration of a modular processing component that enables automatic threat detection capabilities on SWaP constrained platforms. AiTR provides embedded capabilities for existing and next-generation sensors, resulting in approximately 50 percent improvement in target identification range. In FY 2023, prototype and targeting algorithm development was completed with an initial evaluation against military relevant targets. AiTR transitioned to the U.S. Army for further development. • El Camino: This project developed machine learning approaches to enhance imagery to aid in aircraft navigation. Prototype development and demonstration continued in FY 2023. Additional details are classified. • Flying Self Emplacement Sea Glider: This project merged two distinct unmanned systems: Unmanned Undersea Vehicle (UUVs) and Unmanned Aerial Vehicles (UAVs) resulting in a hybrid unmanned system capable of autonomous flight followed by transition to underwater operation. Development of the capability continued in FY 2023 with final transition to the U.S. Navy. • Measured Threat Risk Assessment (MeTRA): This project develops a model-based systems engineering environment and knowledge management collaboration platform to reduce security vulnerabilities, increase resiliency, and to support agile analysis for making data-driven security decisions. In FY 2023, MeTRA initiated modeling and process assessments with final transition to a DoD partner in FY 2024. • Dark Skies: This project reduced risk for tactical aircraft in contested environments. Prototype development continued in FY 2023 with final transition to a DoD partner. Additional details are classified. • Next Generation Hypersonic Testing (NiGHT): This project tested and assessed the utility of a novel technology capable of providing significant performance benefits for future DoD applications. In FY 2023, the project successfully conducted a test program at a government facility and completed initial conceptual design and mission analysis. In FY 2024, using FY 2023 funds, the project will finalize conceptual design and mission analysis before transitioning to the U.S. Air Force and U.S. Navy. Additional details are classified. • Digital Power-Optimized Pixel (D-POP): This project demonstrated a digital pixel circuit design that can reduce camera power consumption by 90 percent when compared to current-fielded digital-pixel camera systems. This project designed, fabricated, and characterized test devices to prove the feasibility of building larger camera systems with this technology. In FY 2023, the project completed the design and fabrication of test chips that integrate a new low-power pixel design into an imaging array readout			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
circuit. Initial laboratory testing and characterization of the devices began. In FY 2024, using FY 2023 funds, the project will complete performance characterization of the new pixel design and transition to DoD partners. • Project HighJumper: This project improved current vision-based guidance for aerial systems. Prototype development continued in FY 2023 with final transition to DoD partners. Additional details are classified. • LAMPOST: This project designed and fabricated a novel millimeter-scale hydrophone allowing a larger number of sensors to be deployed in a given system, increasing the area coverage and sensor performance. FY 2023, LAMPOST developed an analytical and computational model that estimates the bandwidth of the hydrophone. Work continues in FY 2024 before transitioning to the U.S. Navy. • Project 3750: This project developed technologies for information sharing and distributed collaboration. Prototype development continued in FY 2023. Work continues in FY 2024 before transitioning to DoD partners. Additional details are classified. ***FY 2024 Plans:*** In FY 2024, I&M intends to complete execution and transition the following TEK-C projects: • LAMPOST: Prototype development continues in FY 2024, with plans to fabricate and test a prototype hydrophone with analog output before transitioning to the U.S. Navy after an ocean-based demonstration. • Project 3750: Prototype development continues in FY 2024 before transitioning to DoD partners. Additional details are classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Respective efforts conclude at the end of FY 2024.			
Title: Resilient Position, Navigation, and Timing (PNT) Focus Area	-	10.960	7.976
Description: Resilient PNT develops new capabilities for alternative PNT to ensure and enhance situational awareness in contested environments. This project explores technologies and capability concepts through platforms, command networks, and soldier systems, to extend the range of control and protect front-line warfighters and allies. Individual efforts are identified and refined throughout the year of execution through outreach and discovery engagements, including pitch days with industry and non-traditional performers. Prospective efforts are closely coordinated with the Services to deconflict, improve jointness, and increase transition to Service acquisition programs. These investments support targeted efforts, with co-funding from development and transition partners, to prototype solutions for augmenting Global Navigation Satellite Systems (GNSS) and military Global Positioning System (GPS)-denied capabilities with additional capability that can support low-cost platforms or provide backup systems. ***FY 2024 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 plans include development of physical hardware, such as novel inertial measurement units (IMUs) or resonators; software, such as PNT fusion algorithms; concepts, such as mesh networking PNT; and related systems or networks (e.g., communications, advanced processers and algorithms, and sensors that support PNT). These solutions leverage advancements in commercial autonomy, indoor and underground navigation, and opportunities in an increasingly connected world (e.g., PNT through Internet-of-Things (IOT) mapping), particularly through innovation from small businesses and non-traditional performers. Each prototype represents a component of the Resilient PNT project with multiple on-ramps and rapid innovation cycles to maximize the potential impacts for DoD modernization through innovation. I&M final investment decisions are made during the execution year in response to DoD, CCMD, Service, and other government priorities. I&M anticipates identifying approximately 6 to 9 new prototypes to support Resilient PNT in FY 2024. ***FY 2025 Plans:*** FY 2025 plans include continued development of physical hardware, software, concepts, and related systems or networks. These solutions will leverage advancements in commercial autonomy, indoor and underground navigation, and opportunities in an increasingly connected world, particularly through innovation from small businesses and non-traditional performers. Each prototype represents a component of the Resilient PNT project with multiple on-ramps and rapid innovation cycles to maximize the potential impacts for DoD modernization through innovation. I&M final investment decisions are made during the execution year in response to DoD, CCMD, Service, and other government priorities. I&M anticipates identifying approximately 8 to 11 new prototypes to support Resilient PNT in FY 2025. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, funding for this focus area decreases to support acceleration of other high priority prototypes addressing the DoD's current priority challenges.			
Title: Autonomy at the Tactical Edge Focus Area	-	11.960	10.630
Description: Autonomy at the Tactical Edge explores joint mission capabilities to enhance the lethality of the joint force, reduce the time to make critical decisions, autonomously distribute tasking and orders, and protect warfighters through increased use of low-cost, attritable, autonomous systems and enabling intelligent networks. Individual efforts are identified and refined throughout the year of execution through outreach and discovery engagements, including pitch days with industry and non-traditional performers. Prospective efforts are closely coordinated with the Services to deconflict, improve jointness, and increase transition to Service acquisition programs. Selected prototypes target key capabilities that enable leap-ahead improvements in intelligent autonomous systems with cost effective investments from small business and non-traditional performers, aligning with DoD priorities. Solutions may build upon commercial autonomy products, providing a rapid, alternative pathway to military capabilities. These projects leverage advances in high performance computing, autonomy, and machine learning to transfer cognitive burden closer to the point of collection and action.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: FY 2024 plans include maturation of enhanced capabilities for multiple autonomous systems to cooperatively interact; tools to fuse and infer information; autonomous task discrimination and prioritization; collaborative systems for efficient distribution of contested logistics; data pre-processing for fully integrated command and control; and human-machine collaborative decision making. These efforts will examine common software platforms and modular open architecture systems to reduce development cost, increase collaboration among manned and unmanned platforms, and inform requirements. I&M final investment decisions are made during the execution year in response to DoD, CCMD, Service, and other government priorities. I&M anticipates identifying approximately 7 to 10 new prototypes to support Autonomy at the Tactical Edge in FY 2024. ***FY 2025 Plans:*** FY 2025 plans include continued maturation of enhanced capabilities for multiple autonomous systems to cooperatively interact; development of agile computer vision systems; tools to fuse and infer information from a wide variety of sensors and datasets; autonomous task discrimination and prioritization; autonomous operation in complex terrain; collaborative systems for efficient distribution of contested logistics; data pre-processing to reduce bandwidth requirements for fully integrated command and control; and human-machine collaborative decision making providing faster-than-human response to threats. These efforts will examine common software platforms and modular open architecture systems to reduce development cost, increase collaboration among manned and unmanned platforms, and inform requirements. I&M final investment decisions are made during the execution year in response to DoD, CCMD, Service, and other government priorities. I&M anticipates identifying approximately 9 to 13 new prototypes to support Autonomy at the Tactical Edge in FY ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, funding for this focus area decreases to support acceleration of other high priority prototypes addressing the DoD's current priority challenges.			
Title: Innovative Concepts for Counter C5ISR Focus Area	-	12.076	9.995
Description: Controlling the modern battlespace requires controlling the flow of information. Although traditionally a defense only technology area, advances in commercial sensors and apertures, autonomy, low-cost space platforms, and artificial intelligence or machine learning allow for innovative applications of commercial technology to address Joint C-C5ISR gaps. Individual efforts are identified and refined throughout the year of execution through outreach and discovery engagements, including pitch days with industry and non-traditional performers. Prospective efforts are closely coordinated with the Services to deconflict, improve jointness, and increase transition to Service acquisition programs. Innovative Concepts for Counter C5ISR explores prototypes that counter the adversary's ability to collect information through sensors and networks. ***FY 2024 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 plans include exploration of multi-function, autonomous targeting and decision support tools, net-centric electromagnetic spectrum apertures, advanced materials, novel algorithms and waveforms, capabilities that monitor and impact information networks, and other systems to conceal, confuse, disrupt, degrade or destroy C5ISR capabilities. Specifically, efforts target advancements led by commercial and non-traditional performers that may have a disruptive effect on military concepts. I&M final investment decisions are made during the execution year in response to DoD, CCMD, Service, and other government priorities. I&M anticipates identifying approximately 7 to 10 new prototypes to support Innovative Concepts for Counter C5ISR in FY 2024. ***FY 2025 Plans:*** FY 2025 Plans: FY 2025 plans include continued exploration and maturation of multi-function, autonomous targeting and decision support tools, net-centric electromagnetic spectrum apertures, advanced materials, novel algorithms and waveforms, capabilities that monitor and impact information networks, and other systems to conceal, confuse, disrupt, degrade or destroy C5ISR capabilities. Specifically, efforts target advancements led by commercial and non-traditional performers that may have a disruptive effect on military concepts. I&M final investment decisions are made during the execution year in response to DoD, CCMD, Service, and other government priorities. I&M anticipates identifying approximately 9 to 13 new prototypes to support Innovative Concepts for Counter C5ISR in FY 2025. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, funding for this focus area decreases to support acceleration of other high priority prototypes addressing the DoD's current priority challenges.			
Title: Prototyping Through Small Business and Non-Traditional Pathways	-	20.000	12.844
Description: Prototyping Through Small Business and Non-Traditional Pathways leverages innovative technologies and emerging products developed by Service laboratories, FFRDCs/UARCs, the defense industry, small businesses, non-traditional performers, and academia. Individual efforts are identified and refined throughout the year of execution through outreach and discovery engagements, including pitch days with industry and non-traditional performers. Prospective efforts are closely coordinated with the Services to deconflict, improve jointness, and increase transition to Service acquisition programs. Promising solutions are selected for prototyping, and if successful, transition through partnerships with the Services, CCMDs, and other defense agencies. This effort supports the Department's objectives of leveraging commercial innovation to maintain technology superiority; increasing rate of technology maturation; exploring alternative and faster pathways for acquisition; and fielding affordable and effective joint mission capabilities. ***FY 2024 Plans:*** FY 2024 plans are informed by three to four planned Innovation Outreach solution meetings, conducted in partnership with Department and defense agency sponsor, and six to ten industry/innovation discovery events. Focus is planned on engagement			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603838D8Z / *Defense Innovation Acceleration (DIA)*	**Project (Number/Name)** 731 / *Innovation and Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
with small business and non-traditional performers that are not already integrated with the Defense ecosystem. Innovation and Modernization investment decisions are made during the execution year in response to DoD, CCMD, Service, and other government priorities. I&M anticipates identifying multiple new prototypes in FY 2024. ***FY 2025 Plans:*** FY 2025 plans are informed by three to four planned Innovation Outreach solution meetings, conducted in partnership with Department and defense agency sponsor, and six to ten industry/innovation discovery events. Focus is planned on engagement with small business and non-traditional performers that are not already integrated with the Defense ecosystem. Innovation and Modernization investment decisions are made during the execution year in response to DoD, CCMD, Service, and other government priorities. I&M anticipates identifying multiple new prototypes in FY 2025. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, funding for this focus area decreases to support acceleration of other high priority prototypes addressing the DoD's current priority challenges.			
Accomplishments/Planned Programs Subtotals	80.000	74.821	41.445

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Innovation and Modernization (I&M) will support FY 2025 performance metrics to transition projects to the joint warfighter and enable DoD modernization capabilities. I&M leverages the DoD's most efficient and effective acquisition approaches for rapid prototyping. This includes using Other Transaction Authorities, Broad Area Announcements, and new or existing contract vehicles.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603924D8Z *I High Energy Laser Advanced Development*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	81.173	108.865	111.799	110.367	-	110.367	111.019	111.664	112.060	112.950	Continuing	Continuing
924: *High Energy Laser Initiative*	81.173	108.865	111.799	110.367	-	110.367	111.019	111.664	112.060	112.950	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to build a sustainable and long-term advantage, as well as a resilient joint force and defense ecosystem.

This program funds directed energy advanced technology development aimed at translating technology solutions for broadly defined military problems into demonstrated performance pay-offs, increased capabilities, increased supportability, and/or increased affordability. Directed energy weapon systems have many potential advantages, including speed-of-light time-to-target, high precision, low incremental cost per kill, and a magazine that is recharged through on-board, fuel-based power and thermal management systems that reduce logistics requirements in contrast to stocks of munitions or warheads. As a result, directed energy weapon systems have the potential to perform a wide variety of military missions. Activities conducted under this program will develop and demonstrate the technology necessary to enable the employment of directed energy weapon systems in support of mission areas across the Department of Defense.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	111.149	111.799	113.468	-	113.468
Current President's Budget	108.865	111.799	110.367	-	110.367
Total Adjustments	-2.284	0.000	-3.101	-	-3.101
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustment	-2.284	-	-1.096	-	-1.096
• Internal Realignments	-	-	-2.228	-	-2.228
• Economic Assumptions	-	-	0.223	-	0.223

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603924D8Z *I High Energy Laser Advanced Development*

Change Summary Explanation

The FY 2025 decrease of $3.324 million is the result of an internal realignment to Program Element 0604924D8Z: High Energy Laser Tech Maturation (2.228 million) to support directed energy advanced component development and prototypes.

In addition to the internal realignment, a reduction of -$1.096 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact.

+$0.223Small Increase due to economic assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603924D8Z / *High Energy Laser Advanced Development*	Project (Number/Name) 924 / *High Energy Laser Initiative*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
924: *High Energy Laser Initiative*	81.173	108.865	111.799	110.367	-	110.367	111.019	111.664	112.060	112.950	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program is part of an overall Department strategy in directed energy advanced technology development. Efforts within this program will focus on scaling the output power of directed energy weapon systems to reach operationally effective power levels applicable to broad mission areas across the Department of Defense. Additionally, efforts will pursue improvements in common directed energy system components to enable scalable beam control architectures and increase lethality and vulnerability. This program complements, and will be closely coordinated with, other Department efforts directed at specific Service and Agency missions. This program leverages and/or builds upon other investments in directed energy by the Services and Agencies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Directed Energy Advanced Technology Development	108.865	111.799	110.367

Description: Develop, mature, and demonstrate directed energy sources that will enable fieldable directed energy systems. Develop, mature, and demonstrate technologies that improve beam control and beam propagation for directed energy weapon systems. Conduct directed energy lethality and vulnerability experiments on materials, components, and targets. Develop a lethality database for use in system-level models.

FY 2024 Plans:

- Directed Energy Sources: Follow-on 500 kilowatt to 1 megawatt developments under the High Energy Laser Scaling Initiative (HELSI) will further mature through critical design and each will begin the system build phase after the procurement of expensive, long-lead items.

-Beam Control and Propagation: Investigate beam control architectures to include acquisition and course track, fine track and aimpoint maintenance, wavefront compensation, and high power optical components in relevant environments for multiple mission areas to understand effectiveness and identify shortfalls that require additional research focus.

-Lethality: Static and dynamic lethality testing of representative and/or actual targets will be conducted using existing high energy laser systems to validate cruise missile aimpoint selections, vulnerability predictions and system response.

FY 2025 Plans:

- Directed Energy Sources: 500 kilowatt and 1 megawatt class high energy laser development efforts under HELSI will continue with their prototype build phase in support of multiple milestones.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603924D8Z / *High Energy Laser Advanced Development*	**Project (Number/Name)** 924 / *High Energy Laser Initiative*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Beam Control and Propagation: Validate the use of beam control technology to include acquisition and course track, fine track and aimpoint maintenance, wavefront compensation, and high power optical components in relevant environments to understand effectiveness and identify shortfalls that require additional research focus. - Lethality and Vulnerability: Static and dynamic lethality testing of representative and/or actual targets will be conducted using existing directed energy systems to validate aimpoint selections, vulnerability predictions, and system response. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $1.655 million between FY 2024 and FY 2025 reflects an internal realignment to Program Element 0604924D8Z: High Energy Laser Tech Maturation to support directed energy advanced component development, as well as a reduction to meet DoD overall funding reductions, which were spread to mitigate impact.			
Accomplishments/Planned Programs Subtotals	108.865	111.799	110.367

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	1,564.481	968.723	345.384	268.722	-	268.722	224.123	248.053	256.284	261.409	-	-
090: *Nuclear Test*	0.000	0.000	11.000	10.806	-	10.806	11.116	11.106	11.099	11.321	-	-
091: *High Speed Systems Test*	583.209	299.938	112.682	106.830	-	106.830	79.552	81.123	82.747	84.402	-	-
092: *Spectrum Efficient Technology*	107.996	49.962	10.053	10.097	-	10.097	9.487	9.676	9.871	10.069	-	-
093: *Electronic Warfare Test*	233.792	415.938	105.055	39.783	-	39.783	19.578	40.121	40.924	41.742	-	-
094: *Advanced Instrumentation Systems Technology*	144.721	11.938	19.957	21.396	-	21.396	20.818	21.155	22.480	22.930	-	-
095: *Directed Energy Test*	114.737	29.938	10.475	10.010	-	10.010	10.257	10.490	10.721	10.935	-	-
096: *C4I & Software Intensive Systems Test*	193.356	12.933	13.246	13.436	-	13.436	13.711	13.982	14.261	14.546	-	-
097: *Autonomy and Artificial Intelligence Test*	95.599	97.938	47.379	40.985	-	40.985	43.714	44.192	47.676	48.630	-	-
098: *Cyberspace Test*	91.071	18.138	14.707	14.619	-	14.619	14.900	15.198	15.475	15.784	-	-
099: *Space Test*	0.000	32.000	0.830	0.760	-	0.760	0.990	1.010	1.030	1.050	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to defend the homeland, deter strategic attacks and aggression, prevail in conflict, build enduring advantage, and build a resilient joint force and defense eco system. The Test and Evaluation/Science and Technology (T&E/S&T) program seeks out and develops test technologies to keep pace with evolving weapons technologies. Aligned with the National Defense Strategy, this program is critical to ensure that the Department of Defense (DoD) has the ability to adequately test the advanced systems that will be fielded in the future, building a more lethal force. To meet this objective, the T&E/S&T Program performs the following activities:

- Exploits new technologies and processes to meet important T&E requirements.
- Expedites the transition of new technologies from the laboratory environment to the T&E community.
- Leverages industry advances in equipment, modeling and simulation, and networking to support T&E.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603941D8Z *I Test and Evaluation Science and Technology*

Additionally, the T&E/S&T Program examines emerging T&E requirements resulting from Joint Service initiatives to identify T&E technology needs and develop a long-range roadmap for technology insertion. The program leverages and employs applicable applied research efforts from the highly developed technology base in the DoD laboratories and test centers, other Government agencies, and industry to accelerate development of new test capabilities. The program outreaches and engages academia to address test technology challenges in DoD testing, advancing Science, Technology, Engineering and Mathematics (STEM) initiatives at Historically Black Colleges and Universities (HBCU) and other minority serving institutions. This program provides travel funds for T&E/S&T program oversight, special studies, analyses, and strategic planning related to test capabilities and infrastructure. The T&E/S&T Program aligns with the science and technology (S&T) Communities of Interest (COI) to prepare the T&E community to test warfighting capabilities that emerge from priority S&T investments. The T&E/S&T Program utilizes Advanced Technology Development funding because which supports the development and demonstration of high payoff technologies for current and future DoD test capabilities.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	972.372	345.384	302.052	-	302.052
Current President's Budget	968.723	345.384	268.722	-	268.722
Total Adjustments	-3.649	0.000	-33.330	-	-33.330
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.549	-			
• Cancelled Accounts	-0.100	-	-	-	-
• Program Adjustments	-	-	-33.330	-	-33.330

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 091: *High Speed Systems Test*		
Congressional Add: *Test & Evaluation Science & Technology (TRMC)*	188.650	-
Congressional Add Subtotals for Project: 091	188.650	-
Project: 092: *Spectrum Efficient Technology*		
Congressional Add: *Test & Evaluation Science & Technology (TRMC)*	40.000	-
Congressional Add Subtotals for Project: 092	40.000	-
Project: 093: *Electronic Warfare Test*		
Congressional Add: *Test & Evaluation Science & Technology (TRMC)*	298.500	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603941D8Z *I Test and Evaluation Science and Technology*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add Subtotals for Project: 093	298.500	-
Project: 095: *Directed Energy Test*		
Congressional Add: *Test & Evaluation Science & Technology (TRMC)*	18.750	-
Congressional Add Subtotals for Project: 095	18.750	-
Project: 097: *Autonomy and Artificial Intelligence Test*		
Congressional Add: *Test & Evaluation Science & Technology (TRMC)*	76.250	-
Congressional Add Subtotals for Project: 097	76.250	-
Project: 098: *Cyberspace Test*		
Congressional Add: *Test & Evaluation Science & Technology (TRMC)*	4.000	-
Congressional Add Subtotals for Project: 098	4.000	-
Project: 099: *Space Test*		
Congressional Add: *Test & Evaluation Science & Technology (TRMC)*	31.400	-
Congressional Add Subtotals for Project: 099	31.400	-
Congressional Add Totals for all Projects	657.550	-

Change Summary Explanation

FY 2023 changes are due to SBIR/STTR and Cancelled Accounts adjustments.
FY 2025 - A reduction of $33.330 was applied to meet DoD overall funding reductions, which was spread to mitigate impact. $3.020 was the topline reduction, $30.850 was the S&T reduction and an inflation adjustment of +$.549.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603941D8Z / *Test and Evaluation Science and Technology*	Project (Number/Name) 090 / *Nuclear Test*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
090: *Nuclear Test*	0.000	0.000	11.000	10.806	-	10.806	11.116	11.106	11.099	11.321	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Nuclear Test (NT) project mission addresses national test capability gaps by providing accurate, robust, and efficient T&E solutions to successfully develop, validate, and inform the employment of a modernized nuclear enterprise. The Department of Defense (DoD) is prioritizing investments to modernize the nuclear enterprise while sustaining and increasing the resiliency of legacy systems. Current developments focus on deploying capabilities and systems to validate new designs and new materials in a complex threat-representative environment. Current testing infrastructure and methodologies to assess nuclear enterprise systems and microelectronics resilience against emerging threats is limited. Many test capabilities used in the past for acquisition are no longer available, either stopped by policy decisions or dismantled for cost savings. The NT project addresses test technology needs for adequate assessment of nuclear enterprise resiliency and aligns with the DoD S&T priority investments. The NT project is supporting the development of a strategic roadmap and investment strategy to establish nuclear test environments for microelectronics, ground test environments for system level testing, and flight test range enhancements for end-to-end testing needs. The NT project develops technologies to enable robust, accurate, and timely T&E of a modernized nuclear enterprise, and to ensure system suitability and survivability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Nuclear Test (NT)	-	11.000	10.806
Description: The NT project is conducting a test infrastructure gap analysis on the needs of testing the nuclear enterprise. The analysis will result in a time-phased investment strategy based on those requirements. Work includes engaging the nuclear environments test community on needs and gaps to ensure traceability between strategic objectives and test technology development required for relevant microelectronic nuclear test environments such as single event effects, combined effects, electromagnetic pulse and others.			
FY 2024 Plans: The Nuclear Test project is new in FY 2024 and will initiate efforts to address test technology needs identified in the Nuclear T&E investment roadmap and time-phased investment strategy. Several initiatives that were started in the Directed Energy Test Technology project in the area of EMP testing and neutron effects testing were moved to Nuclear Environments Test (NET). NET continued these efforts and started new efforts looking at combined nuclear effects.			
FY 2025 Plans: NET will continue efforts in EMP testing to include large area source development and instrumentation. NET will continue efforts related to neutron testing. NET will initiate efforts in Single Event Effects. NET will initiate efforts related to combined nuclear effects.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 090 / *Nuclear Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 increase to support NET efforts.			
Accomplishments/Planned Programs Subtotals	-	11.000	10.806

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603941D8Z / *Test and Evaluation Science and Technology*	Project (Number/Name) 091 / *High Speed Systems Test*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
091: *High Speed Systems Test*	583.209	299.938	112.682	106.830	-	106.830	79.552	81.123	82.747	84.402	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

High-speed/hypersonic weapons are being developed to ensure the continued military superiority and strike capability of the United States including freedom of movement and freedom of action in areas protected by anti-access/area denial defenses. Current weapon system demonstrations and technology development programs include high-speed and hypersonic air-breathing missiles, maneuvering reentry and boost-glide weapons, hypersonic gun-launched projectiles, and air-breathing space access vehicles. These systems require development of conventional and high-speed turbine, ramjet, scramjet, and combined cycle engines; high temperature materials; thermal protection systems (TPS); and thermal management systems. The High Speed Systems Test (HSST) project addresses test technology needs including propulsion, aerodynamic and aerothermal testing, so the test community has the technology to support the required test scenarios for concepts under development in the S&T community. The technology developments within the HSST project align with the Department of Defense (DoD) S&T priority investments. As such, the HSST project is developing, validating and transitioning advanced T&E technologies for ground test, open-air range flight test, and advanced computational tools, along with instrumentation and diagnostics systems for use in both ground tests and flight tests of high speed systems.

The HSST project develops technologies to enable robust, accurate, and timely T&E of these future weapon systems. DoD acquisition regulations require weapon systems to undergo a thorough T&E process to detect deficiencies early and to ensure system suitability and survivability. However, the extreme environments in which these weapons operate preclude accurate determination of their performance and operability with today's T&E assets. Current national test capabilities have deficiencies in data accuracy, flight condition replication and simulation, test methods, productivity, modeling and simulation (M&S) fidelity, and range safety.

The HSST mission is to address these national test capability gaps by providing test technology solutions that will enable high-speed and hypersonic weapon systems to be successfully developed through accurate, robust, and efficient T&E.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: High Speed Systems Test (HSST)	111.288	112.682	106.830
Description: The HSST project continued to advance ground and flight test technologies, techniques, instrumentation, and modeling and simulation capabilities required for the development of hypersonic weapon systems. In FY 2023, HSST continued to address critical technology shortfalls for hypersonic test and evaluation in aerothermal and propulsion ground testing capabilities and advanced instrumentation to support hypersonic flight tests. Several other technology development efforts also progressed throughout the year. To address the technology shortfall involving aerothermal and propulsion testing, HSST is developing a new test facility that utilizes clean-air heat addition (non-vitiated air) and a variable Mach number nozzle (VMN) capability to provide the representative			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 091 / *High Speed Systems Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
high-temperature conditions for characterizing weapon systems, including air-breathing propulsion capabilities. The clean-air heat addition is especially important to the characterization of air-breathing propulsion systems, as previous HSST efforts demonstrated that vitiated air provides different gas properties than clean air found in the atmosphere and thus is not representative of what the vehicle would experience in flight. This significantly affects the engine's operation in the test environment and results in erroneous predictions of performance in flight. Additionally, characterization of advanced seeker/sensor systems for hypersonic systems also benefits from clean-air heat addition as it provides a more representative environment for the system to operate in. The variable Mach number capability provides a more representative trajectory simulation for the system under test, permitting more accurate predictions before conducting flight tests. Assembly of the new test facility, called the Hypersonic Aerothermal and Propulsion Clean-Air Testbed (HAPCAT), was completed in FY 2022, enabling initial facility checkouts in FY 2023. All of the efforts associated with HAPCAT also serve as pathfinders for the development of a larger-scale, more capable facility at the AEDC. To address quality of flight simulation deficiencies and capacity constraints involved with aerothermal material characterization ground testing, HSST continued new aerothermal test technology development efforts to prototype alternative high enthalpy test technologies. This includes the advancement of inductively-coupled plasma ground test facilities and hypersonic wave heated ground test facilities that can serve as a complement to arc-jet heater capabilities. The SkyRange capability is an unmanned aerial vehicle-based range to support hypersonic flight tests and other missions for the Department of Defense. SkyRange provides a more agile, flexible, and cost-effective method for providing support to long-range hypersonic flight tests with increased data collection capabilities beyond the current state-of-the-art. It also addresses a critical throughput shortfall for supporting the number of hypersonic flight tests required, as a sufficient number of instrumentation assets does not exist. RQ-4 Global Hawks (RangeHawks) and MQ-9 Reapers (RangeReapers) comprise the platforms used for SkyRange, taking advantage of their long-endurance, flexibility, and high-payload capability. SkyRange augments existing air, sea, and land test support assets referred to as the "string of pearls," reducing the high costs associated with traditional flight test support and increasing mission flexibility. Novel sensor suites are being developed in the areas of telemetry capture and relay, multispectral imaging, atmospheric sensing, terminal scoring, and other areas to aid in the development of hypersonic systems. Several of these sensors are being developed through HSST for integration into the SkyRange capability. Achievements were made for both SkyRange aircraft platforms in FY 2023. SkyRange telemetry systems supported multiple missile flight test events on both the Pacific and Atlantic ranges, demonstrating the ability to rapidly deploy, from a central location, to any flight test range that is required. RangeReapers were modified with telemetry systems integrated onto the aircraft. A new adaptive phased-array telemetry system was delivered and has been integrated onto a RangeHawk for initial testing late in FY 2023. The program continued to establish a central hub for mission support in Grand Sky, North Dakota, while continuing to			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 091 / *High Speed Systems Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
develop several forward operating locations for flight test support. Block 20 and Block 30 modifications to RQ-4 aircraft converting them into Rangehawk configuration was also initiated. RangeLynx module development was completed in FY 2022 and installation was completed on RangeReapers in FY 2023, providing real-time, secure satellite-based telemetry and data relay to ground stations and other SkyRange assets. Progress continued on the development of a high-fidelity multispectral imaging tracking system for integration onto an RQ-4 Global Hawk as part of the SkyRange capability. Fabrication was completed and a critical fit-check of the one of a kind prototype system on a RangeHawk was successfully executed. Integration and ground testing was ongoing during FY 2023. A high-altitude laser based atmospheric measurement system in FY 2023. The software to operate this system on a RangeHawk was completed. The first RangeHawk system is being fabricated after passing critical design review in FY 2022. This system provides never-before-obtained critical atmospheric measurements (such as temperature, pressure, and wind speed) along the path of hypersonic missiles during flight test. The data is required to evaluate missile performance during flight. Flying testbeds have the potential to support a wide range of RDT&E activities from basic research to acquisition programs by providing opportunities to mature hypersonic technologies in flight test on shorter schedules with and smaller costs than previously available. An effort, the Multi-Service Advanced Capability for Hypersonics-Test Bed (MACH-TB) is active and have progressed through requirement gathering and design reviews in FY 2023. The MACH-TB effort completed its first and second flight tests in FY 2023, demonstrating sub scale and full scale launch platform testbed capability. Additional upgrades and technology development continued at the CUBRC hypersonic shock and expansion wind tunnels to support hypersonic ground testing. The new hypersonic wave heated facility (HWF) construction continued with manufacturing of the full-scale facility components based on successful operation of the prototype facility. This facility will provide important capabilities for aero-optic and aerothermal ground testing required for hypersonic weapon system development. ***FY 2024 Plans:*** New test techniques for the HAPCAT facility will be developed and demonstrated, taking advantage of the clean-air, long-duration run-time capability. The variable Mach nozzle design will be completed, installed.. Additionally, the HAPCAT facility will be used for the first time to generate data for hypersonic test and evaluation. The initial test will be a demonstrations of aero-optical systems that are critical to various DoD hypersonic efforts. SkyRange will further mature its capabilities while simultaneously supporting DoD flight tests. The development will include a third generation version of the original telemetry antennas, providing additional capability for a wider range of hypersonic telemetry			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 091 / *High Speed Systems Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
collection. The atmospheric measurement capability will be fully integrated and demonstrated in flight on a RangeHawk platform and two additional production units will be manfactured. Development of a flight termination capability and a terminal scoring system will continue on the RangeHawks and RangeReapers. SkyRange will continue conversion of additional RQ-4 platforms into the RangeHawk configurations. A multispectral imaging capability for the RangeReaper will be completed and integrated onto the platform. MACH-TB is planning multiple flight tests for FY 2024 including demonstration of flying test beds from sub-scale platforms, full scale platforms, and novel flight experiment platforms, leveraging commercial launch capability. Initial operation of the CUBRC hypersonic wave-heated facility and design studies to expand the capability will occur. Divert thrust systems provide maneuverability for hypersonic missile defense kill vehicles. Without divert thrust systems, the lethality of missile defense systems would be negatively impacted. A wind tunnel measurement capability will be demonstrated in the CUBRC facility that can support multiple MDA missile systems. ***FY 2025 Plans:*** SkyRange will further mature its capabilities while simultaneously supporting DoD flight tests. The development will include a fourth generation of the original telemetry antennas, providing additional capability and versatility for hypersonic telemetry collection. Development of a flight termination capability and a terminal scoring system will continue on the RangeReapers. SkyRange will continue conversion of additional RQ-4 platforms into the RangeHawk configuration with the delivery of the first aircraft of the production system. MACH-TB is planning additional flight tests for FY 2025 expanding to support air-breathing capabilty. New test techniques for the HAPCAT facility will be developed and demonstrated, taking advantage of the clean-air, long-duration run-time capability. The protype variable Mach nozzle will be tested in order to evaluate its performance. Additionally, the HAPCAT facility will be used for to demonstrate of the performance of radars and radomes systems that are critical to various DoD hypersonic efforts. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease is a result of completed improvements in hypersonic ground test and flight test capability.			
Accomplishments/Planned Programs Subtotals	111.288	112.682	106.830

	FY 2023	FY 2024
Congressional Add: Test & Evaluation Science & Technology (TRMC)	188.650	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 091 / *High Speed Systems Test*

	FY 2023	FY 2024
FY 2023 Accomplishments: Program increase to support the improvement of hypersonic ground test and flight test capability.		
Congressional Adds Subtotals	188.650	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603941D8Z / *Test and Evaluation Science and Technology*	Project (Number/Name) 092 / *Spectrum Efficient Technology*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
092: *Spectrum Efficient Technology*	107.996	49.962	10.053	10.097	-	10.097	9.487	9.676	9.871	10.069	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Weapon systems have become increasingly complex in recent years, resulting in the need for significantly more data to be passed among these systems as well as between the systems and our test infrastructure. A vast amount of data must be collected, transmitted, and analyzed, which requires a large amount of radio frequency (RF) spectrum resources. However, the amount of RF spectrum designated to support test and evaluation (T&E) is decreasing, most notably due to reallocation of spectrum for commercial use. The combination of decreasing RF spectrum and increasing data requirements results in an urgent need to develop test technologies that maximize the use of spectrum resources for the Department of Defense (DoD) T&E operations.

The L- and S- Band frequencies are the traditional spectrum allotted for military T&E use. The explosive need for spectrum in the commercial sector has resulted in reallocation of portions of these bands to industry. To compensate, the DoD is now authorized to use the C-Band spectrum which offers numerous benefits, including the potential for a large increase in available bandwidth, but the C-Band spectrum comes with technical challenges and regulatory constraints. Most notably, our current test infrastructure for telemetry is not designed to accommodate C-Band and the band is heavily shared for alternate uses. Technologies are required to implement innovative techniques that efficiently facilitate our use of C-Band without a major overhaul to our national test infrastructure. For instance, commercial telemetry transmitters operate in C-Band but do not have the form factor (size, weight and power) nor ruggedized packaging to survive airborne test applications.

Traditional telemetry applications employ streaming telemetry where data is moved one-way from the instrumented system under test to our test range infrastructure. Modern network based telemetry and cellular based telemetry capabilities enable more robust, efficient bidirectional transfer of data. The DoD strategy is to create technologies for implementing a telemetry capability in C-Band, using the legacy L- and S-Bands for both streaming and networked telemetry, and researching the feasibility of using higher frequency bands to augment telemetry operations.

The Spectrum Efficient Technology (SET) project is developing test technologies that enable more efficient use of legacy telemetry bands and expansion into non-traditional areas of the RF and optical spectra at DoD test ranges. The technology development efforts within the SET project have been prioritized to align with the Department of Defense guidance on science and technology priority investments. As such, the SET project is focusing on growing data requirements of warfighting systems and the limited availability of spectrum for testing. The SET project is structured to develop test technologies to advance range communications, networked and cellular based telemetry capabilities, and enhanced management of spectrum at DoD test ranges

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Spectrum Efficient Technology	9.962	10.053	10.097

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 092 / *Spectrum Efficient Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The SET project continued to mature technologies required for network and cellular based telemetry for both manned and unmanned platforms. The SET project is developing an airborne cellular transceiver for aeronautical telemetry for larger throughput of data to ground control systems, bi-directional communication to the platform, and spectrum reuse. The SET project is developing low-cost, digital beamforming airborne phased array telemetry receiving antennas to operate in S-band frequencies to autonomously track multiple streams from fast-moving targets. Development of 5G radios integrated onboard airborne platforms to support test missions was initiated. Development of a spectrum analysis manager is near completion; this planning tool will efficiently de-conflict telemetry spectrum assignments and provide actionable information regarding telemetry link performance. ***FY 2024 Plans:*** The SET project will continue development of technologies required for network and cellular based telemetry. The SET project will begin transition of cellular technologies to support aeronautical telemetry requirements at open-air test ranges. Airborne and ground based phased array telemetry antenna technologies will continue to be matured. Ground based phased array telemetry antenna technologies to support large footprint test events will be transitioned to support multiple long range flight test corridors. ***FY 2025 Plans:*** The SET project will continue development and begin transition of technologies required for network and cellular based telemetry. Airborne and ground based phased array telemetry antenna technologies will continue to be matured. Technology development to support adoption of modern modulation schemes will begin enabling higher quality, high throughput telemetry capability at test ranges. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 increase supports program adjustments for technology development of modern modulation schemes.			
Accomplishments/Planned Programs Subtotals	9.962	10.053	10.097

	FY 2023	FY 2024
Congressional Add: Test & Evaluation Science & Technology (TRMC) ***FY 2023 Accomplishments:*** Program increase in support of airborne 5G test capability and 5G range instrumentation.	40.000	-
Congressional Adds Subtotals	40.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 092 / *Spectrum Efficient Technology*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603941D8Z / *Test and Evaluation Science and Technology*	Project (Number/Name) 093 / *Electronic Warfare Test*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
093: *Electronic Warfare Test*	233.792	415.938	105.055	39.783	-	39.783	19.578	40.121	40.924	41.742	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In order to establish dominance in the modern battlespace, our offensive and defensive electronic warfare systems must be capable against advanced radio frequency (RF) directed threats and electro-optic (EO) guided threats, which include infrared (IR) guidance. Ensured dominance in these areas requires more robust test and evaluation (T&E) with technologies that are rapidly adaptable to changing threats.

Readily available, IR seeking, man-portable air defense systems (MANPADS) are difficult to detect and pose an imminent and lethal threat to military aircraft of all types. Our ability to counter such threats is essential to owning the battlespace in theater. Therefore, the ability to test missile warning systems (MWS), hostile fire indicator (HFI) systems, IR countermeasures (IRCM), and advanced threat sensors is critical to our national defense. Additionally, a new generation of enemy RF missile seekers is both currently fielded and in further development, requiring a correspondingly new generation of test technologies to test the latest countermeasures. The T&E community is required to test IRCM and RF countermeasure systems in a repeatable manner with ground-truth data before and after integration into warfighting systems. Without new test technologies, the Department of Defense (DoD) will be unable to perform adequate T&E of advanced warning and countermeasure systems.

The Electronic Warfare Electronic attack and Electronic protect (EP) community is developing jammers and EP measures that are more sophisticated and take advantage of newer technology that allows adaptive waveforms and artificial intelligence and autonomy to respond to threats more rapidly and robustly. In addition, the testing of these systems in realistic many on many environments that are more threat representative requires new technology investment.

The technology development efforts within the Electronic Warfare Test (EWT) project have been prioritized to align with DoD guidance on science and technology priority investments. As such, the EWT project is focusing on the test needs in both the EO, including IR, and the RF threat domains. Additionally, development of core test technologies in this area can be leveraged to meet other EO and RF test requirements, such as in fire control systems; intelligence, surveillance and reconnaissance (ISR) sensors, and weapon seekers.

The EWT project develops test technologies to stimulate IRCM and RF system sensors through the high-fidelity simulation of scenes viewed by the sensors. Stimulation can be as simple as testing to see if a system under test responds to an image or as complex as simulating complex battle space phenomena to measure the response of a system under test in a more relevant, cluttered scenario. Simulations and stimulations are used at open air ranges and in installed system test facilities (ISTF), and in hardware-in-the-loop (HWIL) test beds.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Electronic Warfare Test	117.438	105.055	39.783

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 093 / *Electronic Warfare Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: EWT initiated joint Electronic Warfare (EW) test technology developments to address Electronic Attack (EA) test technology needs, to expand the battlespace, and to enable improved assessment of EW platforms. This includes efforts to address inadequate laboratory and secure Installed System Test Facility (ISTF) modeling and simulation (M&S) representing evolving and changing RF threat systems, simulator and stimulator test technology. These joint EW test technologies initiated will also address shortfalls with open-air-range complex radar emitters, models, and RF threats inability to represent emerging and changing threat systems. The EWT project initiated efforts to address the inability to test EA techniques in secure environments and replicate modern threat signals through Hardware-In-the-Loop (HITL) and Installed System Test Facility (ISTF) simulations. Also, EWT initiated efforts to expand current range play-boxes to enable test and training with EW platforms that stress modern threat radar acquisition and detection ranges. The EWT project also began to address test technology needs for EW platforms and systems to have representative scale and depth for test and training of real-world missions. The EWT project continued to develop high fidelity scene generation technology for both EO and RF environments. The EWT project continued to develop high fidelity scene generation technology for both EO and RF environments. Work continued on the development of hardware and software that generates large number of independent radar targets in a high fidelity HITL facility. This enabled chamber testing of radars in more dense target environments by generating large numbers of dissimilar false targets. Work continued on high temperature IR scene projectors. The EWT project developed a dynamic infrared (IR) scene projector to enable chamber testing of missile warning systems and directional infrared countermeasure systems. The new scene projector creates scenes with higher temperatures and higher resolution creating a more threat representative environment for sensor test. The effort transitioned and delivered scene projectors to the Air Force Guided Weapons Evaluation Facility (GWEF). Work continued on increasing the efficiency of LED pixels for use in IR scene projectors. Work continued on development of interfaces for use of Active Electronically scanned arrays for open air range threat simulators.			
FY 2024 Plans: EWT will continue joint electronic warfare test technology developments to address Electronic Attack (EA) test technology needs, to expand the battlespace, and to enable improved assessment of EW platforms. The EWT project will continue investments in technologies related to Cognitive EW, Cognitive Radar, and EW sensors that feed Artificial Intelligence uses of EW data. EWT will continue technology developments to improve Ground EW systems and cUAS EW testing. Prototype open air range threat emitter with wider frequency coverage and agility will be matured. EWT will continue efforts in Infrared Scene projection for sensor and seeker testing. EWT will continue efforts to address scene generation for both EO and RF sensors and seeker testing. EWT will initiate efforts to improve motors for flight motion simulator performance. EWT will initiate efforts to improve airborne jammer simulation. EWT will initiate efforts to address simulation of many on many EA environment.			
FY 2025 Plans: EWT will continue joint electronic warfare test technology developments to address Electronic Attack (EA) test technology needs, to expand the battlespace, and to enable improved assessment of EW platforms. The EWT project will continue investments			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 093 / *Electronic Warfare Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
in technologies related to Cognitive EW, Cognitive Radar, and EW sensors that feed Artificial Intelligence uses of EW data. EWT will continue technology developments to improve Ground EW systems and cUAS EW testing. EWT will continue efforts in Infrared Scene projection for sensor and seeker testing. EWT will continue efforts to address scene generation for both EO and RF sensors and seeker testing. EWT will continue efforts to improve motors for flight motion simulator performance. EWT will continue efforts to improve airborne jammer simulation. EWT will continue efforts to address simulation of many on many EA environment. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease from FY 2024 to FY 2025 due to the completion of an upgrade to electronic warfare threat emitter technology.			
Accomplishments/Planned Programs Subtotals	117.438	105.055	39.783

	FY 2023	FY 2024
Congressional Add: Test & Evaluation Science & Technology (TRMC) ***FY 2023 Accomplishments:*** Program increase to support improvement of electronic magnetic spectrum test emitters, sensor fusion, and 5th generation aerial target test technology development.	298.500	-
Congressional Adds Subtotals	298.500	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603941D8Z / *Test and Evaluation Science and Technology*	Project (Number/Name) 094 / *Advanced Instrumentation Systems Technology*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
094: *Advanced Instrumentation Systems Technology*	144.721	11.938	19.957	21.396	-	21.396	20.818	21.155	22.480	22.930	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Advanced Instrumentation Systems Technology (AIST) project addresses the test technology gaps resulting from emerging weapon systems that need to be assessed at the Department of Defense (DoD) installed systems test facility and hardware-in-the-loop testing (ISTF/HITL) and open-air range test facilities (including tropospheric, land-based, open-ocean, and undersea ranges). Instrumentation requirements for systems under test are increasing exponentially for new weapons systems. System-borne, warfighter-wearable, and remote sensing instrumentation packages are required. This instrumentation is for sensing and collecting critical performance data; determining accurate time, space, position information (TSPI) and attitude information; interfacing with command and control data links; monitoring and reporting system-wide communications; recording human operator physical and cognitive performance; and storing and transmitting data.

The technology development efforts within the AIST project have been prioritized to align with the DoD guidance on science and technology (S&T) communities of interest (COIs). The AIST project is focused on developing technologies for advanced TSPI instrumentation (especially with limited or no availability of Global Positioning System (GPS)), advanced sensors, advanced energy and power systems for instrumentation, micro-electronics, mitigating range encroachment issues, and measuring warfighter physical and cognitive performance. The AIST project addresses requirements for miniaturized, non-intrusive instrumentation suites with increased survivability in harsh environments. Such instrumentation is an urgent need because minimal space is available to add instrumentation to new or existing weapon systems subsequent to their development; furthermore, additional weight and power needs for instrumentation can adversely affect weapon system signature and performance. Instrumentation for humans-in-the-loop, especially dismounted warfighters, must not adversely affect performance, induce artificiality in the test environment, or create any operational burdens. New technologies can be exploited to integrate small, non-intrusive instrumentation (micro-technology) into emerging platforms during design and development, and, in some cases, into existing platforms. This class of instrumentation will provide critical system performance data during operational test (OT) and continuous assessment throughout a system's lifecycle. Technology developed under AIST can also benefit training and combat missions by enabling a continual feedback loop between the developer, training staff, operators, and commanders.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Advanced Instrumentation Systems Technology	11.938	19.957	21.396
Description: Major thrusts included efforts in advanced sensors and TSPI instrumentation. The AIST project continued three efforts to design a test technology for weapon testing use cases impacting the broad ocean area to collect TSPI, lethality, and scoring data; one technology uses optics, another leverages an imaging radar, and a third employs underwater acoustic technology. We began a technology development effort that implements a terrestrial-based network of transmitters to maintain situational awareness on tactical system when performing Multi-Domain Operation testing in GPS jammed/denied/degraded environments. The AIST project commenced development of a Global Navigation Satellite System (GNSS) Engine Software			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 094 / *Advanced Instrumentation Systems Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Defined Receiver using multichip module technology, and acquisition and tracking algorithm development to provide TSPI ground truth for T&E of missile systems, etc., in high dynamic environments. The AIST project continued an effort to develop a sensor to collect acceleration measurement data during high-speed flight tests, enabling the gathering of accurate position and attitude, 6 Degrees of Freedom (6DOF) data over very long ranges and into the exo-atmosphere to measure the aerodynamics and internal guidance and control systems of new munitions in an ultra-high dynamic environment. The AIST project continued development of an innovative sea battery technology to support energy generation in the deep ocean via oxidizing aluminum, enabling clandestine long-term deployments of deep ocean TSPI and advanced sensor instrumentation. We continued an effort to develop advanced electromagnetic (EM) propagation modeling & real-world measurements for an open-air dynamic radar cross section measurement system to provide insight regarding potential effects of planned offshore wind power infrastructure on Atlantic Test Range operations. The AIST project completed the development of an effort to support testing of military aircraft using externally mounted sound pressure instrumentation to gather data for analysis in all weather conditions, to overcome current constraints to flight testing in dry environments. Flight testing in a relevant environment is planned to take place at the Naval Air Warfare Center Aircraft Division, Patuxent River, MD. The AIST project continued a portable technology development effort using acoustic splash signatures to measure weapon location and attitude to characterize high dynamic weapon end-game maneuvers, and to evaluate impact location & velocity of attacking projectiles and resolving (scoring) very large quantities of impacts occurring closely spaced in position and/or time. This system has participated in at-sea system checkout activities and has been an auxiliary sensor on several at-sea tests of weapon systems impacting the ocean. ***FY 2024 Plans:*** The AIST project will initiate an effort to develop a mobile shallow water range to evaluate unmanned undersea vehicles (UUV) sensors and systems for high-resolution ocean environmental sensing, monitoring, and prediction systems. The AIST project plans to initiate a soft catch system for large caliber munitions to assess munitions internal ballistics, strength of design, and function of critical components, where the munition can be fired at operational velocities, and captured in a way that does not damage the projectile or the environment. ***FY 2025 Plans:*** The AIST project will continue efforts to develop a mobile shallow water range to evaluate unmanned undersea vehicles (UUV) sensors and systems for high-resolution ocean environmental sensing, monitoring, and prediction systems. The AIST project			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 094 / *Advanced Instrumentation Systems Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
plans will continue development of a soft catch system for large caliber munitions to assess munitions internal ballistics, strength of design, and function of critical components, where the munition can be fired at operational velocities, and captured in a way that does not damage the projectile or the environment. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase between FY 2024 and FY 2025 provides new test instrumentation technology development technologies.			
Accomplishments/Planned Programs Subtotals	11.938	19.957	21.396

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603941D8Z / *Test and Evaluation Science and Technology*	Project (Number/Name) 095 / *Directed Energy Test*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
095: *Directed Energy Test*	114.737	29.938	10.475	10.010	-	10.010	10.257	10.490	10.721	10.935	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Department of Defense (DoD) is exploring the military utility, safety, and suitability of directed energy weapons. A robust test capability to assess directed energy weapons is essential to understanding their effectiveness and limitations, including determining their effectiveness in performing counter improvised explosive device (C-IED) operations and counter UAS operations. Such assessments will depend upon knowledge acquired through the test and evaluation (T&E) of directed energy technologies and testing of operational concepts. Directed energy weapon technologies, primarily consisting of high energy lasers (HEL) and high powered microwaves (HPM), are outpacing available test capabilities. Traditional test techniques for evaluating conventional munitions (with flight times ranging from seconds to minutes) are not sufficient for the T&E of directed energy weapons that place energy on target instantaneously. Consequently, new test technology solutions are needed to ensure that adequate developmental, live-fire, and operational test capabilities are available when directed energy programs are ready to test.

Directed energy system and component testing requires three principal assessments: (1) energy or power on target; (2) the effects on the target; and (3) the propagation of the directed energy to the target through the atmosphere. In addition, the vulnerabilities of DoD systems to directed energy threats are required to be characterized, such as those requirements captured in Military Standard (MIL-STD)-464C. Equally as important, current test capabilities do not provide the detailed data required to understand U.S. directed energy system performance and effects. The technology development efforts within the Directed Energy Test (DET) project have been prioritized to align with DoD guidance on science and technology priority investments. As such, the DET project is developing the technologies necessary for quantitative assessment of United States (U.S.) HEL and HPM performance, as well as the vulnerability of DoD weapon systems to enemy directed energy threats.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Directed Energy Test	11.188	10.475	10.010
Description: The DET project initiated efforts to upgrade directed energy lab and test range infrastructure. The DET project continued efforts to measure HEL energy on small targets such as mortars, rockets, artillery, and UAS. The effort designed a recoverable mortar prototype to address Army and Navy requirements and an Air Force requirement for a missile-mounted target board. The DET project continued efforts to develop M&S capability for assessing effects of threat HEL systems on blue aircraft. The DET project completed efforts to mature a dense plasma focus technology to produce strategically relevant, ultra-short pulse neutron fluence levels for nuclear vulnerability testing. The DET project successfully demonstrated neutron production and dense plasma focus technology development continues to be optimized to support neutron production rates scalable to a test facility to be developed by the Central Test and Evaluation Investment Program (CTEIP). A larger chamber was integrated into the facility to test obtaining higher			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 095 / *Directed Energy Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: The DET project will continue developments in HEL test technologies and HPM test technologies to characterize the performance and effectiveness of HEL and HPM systems as they engage small targets, such as enemy rockets, missiles, artillery, and unmanned aerial vehicles, as well as electronic systems and other targets of interest and expand into larger UAS classes. This will include sensor and associated data collection systems that can survive an HPM environment, near surface laser weapon system propagation measurement sensors, atmospheric absorption sensors for high energy lasers, and target swarm tracking. DET will complete efforts to develop modelling and simulation tools to assess survivability and vulnerability of DoD systems to attack from red HPM and HEL weapons. DET will complete efforts to develop atmospheric characterization tools that are integrated with weather models for an HEL predictive performance assessment. DET will continue efforts to upgrade HPM sensor field measurement instrumentation. DET will initiate efforts to measure HPM fields for airborne HPM weapon characterization. DET will continue and initiate new efforts to develop HPM sources for survivability and vulnerability testing as well as to support HPM lethality assessments. DET will continue efforts to develop mobile reusable HPM test assets. ***FY 2025 Plans:*** DET will continue efforts to upgrade HPM sensor field measurement instrumentation. DET will continue efforts to measure HPM fields for airborne HPM weapon characterization. DET will continue efforts to develop HPM sources for survivability and vulnerability testing as well as to support HPM lethality assessments. DET will continue efforts to develop mobile reusable HPM test assets. DET will initiate efforts to improve assessment of HPM survivability and vulnerability of space systems. DET will initiate efforts for cUAS testing instrumentation. DET will initiate efforts to improve HPM Modelling and Simulation in support of lethality assessments and test safety. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease from FY 2024 to FY 2025 is due to program adjustments related to the completion of development efforts.			
Accomplishments/Planned Programs Subtotals	11.188	10.475	10.010

	FY 2023	FY 2024
Congressional Add: Test & Evaluation Science & Technology (TRMC) ***FY 2023 Accomplishments:*** Program increase to develop a directed energy airborne high-power testbed.	18.750	-
Congressional Adds Subtotals	18.750	-

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 095 / *Directed Energy Test*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603941D8Z / *Test and Evaluation Science and Technology*				Project (Number/Name) 096 / *C4I & Software Intensive Systems Test*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
096: *C4I & Software Intensive Systems Test*	193.356	12.933	13.246	13.436	-	13.436	13.711	13.982	14.261	14.546	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Command, Control, Communications, Computers, Intelligence (C4I) and Software Intensive Systems (SIS) (C4T) project addresses test technology for next generation resilient, survivable, federated networks and information ecosystems (information superiority) from the tactical level up to strategic planning. The technology development efforts within the C4T project have been prioritized to align with DoD guidance of S&T Communities of Interest (CoIs) and the National Defense Strategy. Gaps are driven by more complex warfare environments and distributed systems; large quantities of data and intelligence (e.g., Big Data, Artificial General Intelligence (AGI) and Machine Learning Algorithms (MLA)); and more software intensive systems (e.g. F-35, CVN, IBCS)).

C4T addresses gaps in Big Data Analytics technologies to gain knowledge from massive amounts of structured and unstructured data collected over a single test, but also expanded to look at the systems' performance over the acquisition lifecycle. The technologies are required when testing sensor platforms, command and control systems and weapon platforms that support the kill chain in a Joint multi-domain operation. These systems must be evaluated for their ability to provide the accurate, timely transfer of data (e.g., target tracks, weapons allocation, mission tasking, and situational awareness) as the data passes among the Services, Warfighting Domains, and Coalition Partners.

C4T also addresses gaps in Live and Simulated Environments, these technologies are required to increase the use of a distributed test environment for new warfare concepts leveraging simulated entities (e.g. modeling and simulation) for more thorough joint mission context platform T&E (e.g., Anti-Access Arial Denial (A2AD)and Manned and Unmanned Systems (MUM-T)). The technologies within C4T will remove undesired distributed testing biases while improving test agility and the tester's ability to effectively support knowledge management, rapid analysis of "Big Data," and automated test reporting. The C4T project advances these test technologies as well as Big Data collection, analysis, and visualization that enable the virtual integration of Department of Defense (DoD) weapon laboratories and open air ranges. Using Modeling and Simulation (M&S) along with hardware-in-the-loop (HWIL) laboratories, the effectiveness of Joint missions can be assessed in terms of system-of-systems interoperability and effectiveness in executing Joint mission operations, including testing of weapons and C4I and SIS systems accessing and providing information.

Lastly C4T addresses technologies to support C2 Analysis in Multi-Domain Operations (MDO), specifically at scale and density to fully assessed the mission kill web with new test design, planning and assessment technologies utilizing artificial intelligence and machine learning to not only plan assessments within a domain, but also to enable assessments of "what-if" testing cascading across the other domains of warfare. This will enable full assessment of multi-domain operations to ensure information superiority to accomplish mission objectives. New intelligent testing technologies are required for assessment of MDO missions for our future warfighter AI/ML-enabled C2 Warfighter Systems to ensure the battlefield will not be the testing field. These new MDO focused technologies are vital to creation of a robust operationally relevant Joint Service All Domain Test Range.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 096 / *C4I & Software Intensive Systems Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: C4I and Software Intensive Systems Test	12.933	13.246	13.436

Description: The C4T Threat Submarine Modeling Validation project transitioned advanced modeling and simulation technology capabilities to the Naval Undersea Warfare Center (NUWC) Weapons Analysis Facility (WAF) validated (by COTF and DOT&E) modeling capabilities that resulted in over $150 million of saving by reducing the number of live in-water runs required for the MK 48 Heavy Torpedo. These technologies will be instrumental to all future next generation torpedo developments as well as current torpedo system upgrades. With these advanced M&S capabilities we can now finally assess performance of torpedoes in all underwater bathometry (e.g. deep, shallow, and varying ocean ecology). Recent work included increasing model fidelity and validating target models to support additional transition opportunities to the Navy Undersea Weapons Program Office and the Office of Naval Intelligence

The C4T MultiVariate Data Workbench (MVDW) is transitioning to the US Army Fort Sills Test Directorate providing advanced AI/ML technologies to support near real-time data collection and validation for the US Army indirect fire doctrine. Data collection includes structured and unstructured datasets which currently requires multiple days to validate after collection and often resulting in retesting cycles as anomalies are not recognized during execution. MVDW will provide these answers after the completion of each test day. This technology was used to support US Army Bold Quest 2022. Recent activities involved extensive stability, usability, and use-case-driven testing and its successful participation in EDGE23.

The C4T Multivariate Algorithms for Optimized Test Heuristics and Real-time Analysis (MAOTHRA) is transitioning to the Redstone Test Center ATEC providing advanced statistical analytic techniques in a parallel processing computing environment to automatically calibrate cameras (low-cost, high-speed) to support generation of TSPI on weapon systems test events, resulting in cost savings from existing high-cost cameras with lengthy (hours) calibration techniques to low-cost cameras that are calibrated within minutes. MAORTHRA AI/ML techniques for analysis of large multivariant data sets to provide valuable insights from time-series weapon systems supported the US Army Project Convergence 2022. MAOTHRA successfully participated in Army EDGE23 and Northern Edge 23, has begun initial integration with Cloud Hybrid Edge-to-Enterprise Evaluation and Test Analysis Suite (CHEETAS) for transition.

The C4T project continued the development of several big data analytics (BDA) efforts implementing artificial intelligence/ machine learning (AI/ML) techniques for multi-variant time series sensor datasets, unstructured dataset analytics (audio, video, and imagery), and advanced visualizations of large T&E datasets.

These efforts include traditional statistical and machine learning/artificial intelligence (ML/AI) techniques to deal with massive complex datasets; the software execution has been focused on the use of containerized microservices architecture for ease

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 096 / *C4I & Software Intensive Systems Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
of technology transfer across all T&E organizations. Common technologies across C4T project also supports advanced data synchronization and fusion frameworks to automate development of assessment metrics and to quickly recall synchronized segments from large T&E datasets (e.g., multivariate time series, audio, video, and imagery. Lastly, C4T project is creating advanced visualization techniques; to support the presentation of information by abstracting data into particles to optimally exploit current vision and neuroscience research. This allows the T&E analyst to visualize anomalies, trends, patterns, and failure conditions found across the entirety of the T&E dataset and not be focused on an individual dataset. These technologies are being developed to support test and evaluation of future warfighter C4I and Software Intensive Systems (4th and 5th generation military platforms). ***FY 2024 Plans:*** The C4T project will continue development of technologies to enable the next generation resilient, survivable, federated networks and information ecosystems (information superiority) from the tactical level up to strategic planning. The C4T project will continue to focus on testing more advanced BDA technologies to support rapid data-to-decisions across complex and distributed warfighter systems environments and in support of each warfighter platform's acquisition lifecycle. The C4T project will initiate investments to support C2 Analysis in Multi-Domain Environments and investigate the increased use of test automation utilizing virtualization and cloud environments. C4T will initiate test technology development to enable a test, training, and experimentation continuum supporting all aspects of multi-domain operations. The C4T project will investigate the increased use of live and simulated test participants using test environment driven M&S validation techniques. ***FY 2025 Plans:*** The C4T project will initiate transition of technologies to enable the next generation resilient, survivable, federated networks and information ecosystems (information superiority) from the tactical level up to strategic planning. The C4T project will begin transition of more advanced BDA technologies to support rapid data-to-decisions across complex and distributed warfighter systems environments and in support of each warfighter platform's acquisition lifecycle. The C4T project will continue investments to support C2 Analysis in Multi-Domain Environments and investigate the increased use of test automation utilizing virtualization and cloud environments. C4T will continue test technology development to enable a test, training, and experimentation continuum supporting all aspects of multi-domain operations. The C4T project will continue to investigate the increased use of live and simulated test participants using test environment driven M&S validation techniques. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase from FY 2024 to FY 2025 is due to program adjustments related to the transition of technologies for the C4T project.			
Accomplishments/Planned Programs Subtotals	12.933	13.246	13.436

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 096 / *C4I & Software Intensive Systems Test*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603941D8Z / *Test and Evaluation Science and Technology*	Project (Number/Name) 097 / *Autonomy and Artificial Intelligence Test*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
097: *Autonomy and Artificial Intelligence Test*	95.599	97.938	47.379	40.985	-	40.985	43.714	44.192	47.676	48.630	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Unmanned and autonomous systems support every domain of warfare -- operating in space, in air, on land, on the sea surface, undersea, and in subterranean conditions to support a vast variety of missions. The emergence of Artificial Intelligence (AI) brings a host of revolutionary capabilities that will profoundly influence warfare, and bring special challenges for testers of Artificial Intelligence systems. The Unmanned Autonomous System Test (UAST) project addresses current and emerging challenges associated with the test and evaluation (T&E) of unmanned systems, particularly in testing autonomy, artificial intelligence, and machine learning. As such, the UAST project is developing test technologies to simulate, stimulate, instrument, measure, and assess an autonomous system's ability to perceive its environment, process information, adapt to dynamic conditions, make decisions, and effectively act on those decisions in the context of mission execution.

The AAIT project will provide the test technologies to effectively measure performance and characterize risk, thereby increasing warfighter trust in autonomous systems and artificial intelligence tools. This program will improve DoD test capabilities and methodologies to address the testing of increasingly autonomous units operating in unstructured, dynamic, battlespace environments. Furthermore, advancements are being made in developing collaborating, system-of-autonomous-systems that will work in concert as a swarm or pack, and in close proximity with humans. New test technologies are needed to stress the collective set of autonomous systems under realistic conditions, predict emergent behavior of autonomous systems, emulate the complex environment, and assess mission performance of these highly-coupled and artificially-intelligent systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Autonomy and Artificial Intelligence Test	21.688	47.379	40.985
Description: The Autonomy and Artificial Intelligence Test (AAIT) Project continued test technology development supporting testers in the DoD of Unmanned and Artificial Intelligence-Based Systems. AAIT develops technology to improve ability to develop salient and high-value test plans, increasing safety during live test, to identify safety defects deep inside complex autonomy software, and to improve performance of machine vision systems. The AAIT project collaborated with the Autonomy Community of Interest (COI) Test and Evaluation, Verification and Validation (TEVV) Working Group to ensure that the AAIT project is investing in technologies relevant to the future of autonomous systems. The AAIT Project seeks solutions for legacy topics (test planning, test execution, safety, and performance assessment) but has also expanded interest to find solutions for Artificial Intelligence and Machine Learning systems, topics identified by the intelligence community, and any other topics that are priority for TRMC and OUSD(R&E).			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 097 / *Autonomy and Artificial Intelligence Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The AAIT project continued the Assured DevSecOps of Autonomous Systems (ADAS) effort. ADAS addresses the unique challenges of Autonomy test & evaluation to provide enterprise solutions in support of future programs and joint initiatives. ADAS addresses autonomy test and evaluation verification and validation (TEV&V) needs across the life cycle beginning with mission analysis and engineering and ending with the mission operations. ADAS is a leading pathfinder effort to address gaps identified by the National Security Commission on Artificial Intelligence. The AAIT Project continued investments in robustness testing technology to detect and predict safety-related vulnerabilities and failures within UAS software, in advance of live test. The AAIT project provided the key S&T technology as a basis for the Navy-led CTEIP, “Autonomy, Integration, and Teaming” (AIT), which developed test capabilities to be demonstrated on the Airborne Collision Avoidance System (ACAS-Xu) on Triton, and as a basis for Guardian, a Ground Based Detect and Avoid system, which will allow UAS to achieve certification for use during live test (DO-278A/NAVAIR Cert). The same core technologies are used as a basis for the Army-led CTEIP “Autonomous Systems Test Capability” (ASTC). The AAIT project give testers a more comprehensive means of identifying and reporting on safety vulnerabilities found deep within the UAS software, allowing testers to test for defects that may not have ever been found by traditional testing techniques. The AAIT Project completed development of test technology to improve test planning for surface, sub-surface, ground, and airborne autonomy using optimization algorithms to rapidly generate salient test scenarios. The AAIT project provided the key S&T technology (for test planning) as a basis for the Navy-led CTEIP, “Autonomy, Integration, and Teaming” (AIT). The same core technologies are used as a basis for the Army-led CTEIP “Autonomous Systems Test Capability” (ASTC). The AAIT project, via the CTEIP programs, give testers information about how to choose high-value test conditions. AAIT technology shows exactly where software-based systems are on a performance edge (between mission success and mission failure) and a safety edge (between safety success and safety failure). AAIT helps testers see critical test conditions that they might not have chosen by traditional means. The AAIT Project initiated development of technology to create machine-learned, behavioral copies of autonomy software. This technology creates faster-than-real-time versions of a given autonomy that can then be tested in an accelerated timeline in a simulated environment, and can also be cloned to be tested in parallel-processing fashion. This technology will provide faster, better, and more statistically significant testing data for testers. This technology can also capture human performance, for example a pilot, or a ground radar operator) to be used as more realistic elements of a simulated environment. The AAIT project developed machine vision test technologies to identify where a machine vision system shows brittleness – inconsistent identification – of elements in its field of view. This technology can be used to improve performance of machine vision systems by identifying test data (images or video) to be used for focused testing and also can be used to re-train a brittle system for improved performance.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 097 / *Autonomy and Artificial Intelligence Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The AAIT Project developed technology to use functional architecture data to identify safety faults, and build safety fault trees) for complex autonomy software systems. Fault tree development has been traditionally built by hand. This technology will identify faults and build a fault tree more comprehensively and thoroughly than humanly possible, saving resources and improving the identification of safety risks in advance of live test. The AAIT Project developed technology to assist with the validation and verification of a learning-in-the-field AI-based system. This technology will assist testers by advising when a learning system has learned sufficiently different information to the point where it is no longer valid for use. This technology can also be used to determine if a system trained in one domain (urban, for example) is valid for use in another domain (desert). The AAIT project initiated technology development to support AI hubs verification, validation, test and evaluation. ***FY 2024 Plans:*** The AAIT Project will continue development of test technology for machine vision systems, learning systems, and improved safety awareness, and synthetic imagery generation. AAIT will initiate technology development for measures of trust/confidence in autonomous/AI-based systems, also measures of effectiveness of human/machine teams. The AAIT project will develop AI test and evaluation (T&E) high-performance computing resources to support continued enhancement of artificial intelligence hubs technology. The AAIT project will continue technology development within the ADAS effort The AAIT Project will continue to initiate and develop technologies to support test planning, test execution, and performance assessment of unmanned, autonomous, artificial intelligence, and machine learning systems. ***FY 2025 Plans:*** The AAIT Project will transition test technology for machine vision systems, learning systems, and improved safety awareness, and synthetic imagery generation. AAIT will initiate technology development for measures of trust/confidence in autonomous/AI-based systems, also measures of effectiveness of human/machine teams. The AAIT project will begin transition of technology development initiated in the ADAS effort. The AAIT project will continue development of AI test and evaluation (T&E) high-performance computing resources to support continued enhancement of artificial intelligence hubs technology. The AAIT Project will continue to initiate and develop			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 097 / *Autonomy and Artificial Intelligence Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
technologies to support test planning, test execution, and performance assessment of unmanned, autonomous, artificial intelligence, and machine learning systems ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease from FY 2024 to FY 2025 is a result of the completion of projects.			
Accomplishments/Planned Programs Subtotals	21.688	47.379	40.985

	FY 2023	FY 2024
Congressional Add: Test & Evaluation Science & Technology (TRMC) ***FY 2023 Accomplishments:*** Program increase to support the initiation of AI hubs, all-domain autonomous M&S technology development	76.250	-
Congressional Adds Subtotals	76.250	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603941D8Z / *Test and Evaluation Science and Technology*	Project (Number/Name) 098 / *Cyberspace Test*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
098: *Cyberspace Test*	91.071	18.138	14.707	14.619	-	14.619	14.900	15.198	15.475	15.784	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Department of Defense (DoD) ability to use cyberspace for rapid communication and information sharing in support of operations is a critical enabler of DoD military missions. Advancements in utilizing cyberspace are outpacing the technologies needed for test and evaluation (T&E). The Cyberspace Test Technology (CTT) project develops advanced technologies and methodologies to test and evaluate DoD capabilities and information networks to defend and conduct full-spectrum military operations across cyberspace. This program will improve cyberspace T&E capabilities to support the continual experimental, contractor, developmental, operational, and live-fire testing requirements of warfighter systems operating in cyberspace. Many of the test tools and infrastructure items required for systems in cyberspace will require advancement and maturation of nascent test technologies. The CTT project will address test technology shortfalls in cyberspace testing, including planning cyberspace tests, creating representative cyberspace threats and test environments, executing cyberspace tests, and performing cyberspace test analysis and evaluation.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Cyberspace Test	14.138	14.707	14.619
Description: The CTT project developed a next generation Traffic Generation and Content System that used modern Artificial Intelligence techniques and detailed network, human social, and workflow models to generate traffic. This technology development worked to ensure host and network traffic that was not easily distinguished from human generated traffic. The CTT project developed the novel capability to fuzz targets' virtual machine state. This technology enabled exploring an entirely new class of attacks compared to existing fuzzers which fuzzed only the program inputs. The CTT project developed a capability to address fuzzing technical challenges by building on the VADER Modular Open Source Architecture (MOSA) framework that will enable fuzzing for critical DoD cyber-physical systems. The CTT project developed a framework to provide the red team and other DoD test organizations an automated attack capability. This technology development enabled red team personnel to focus on more challenging problems and other test organizations to conduct automated testing. The CTT developed methods to automate the enumeration of vulnerable services on a host that enabled red team personnel to automate common attack patterns. The CTT developed frameworks to support the ability of red teams to rapidly create and deploy capabilities to abuse existing functionality in applications and operating systems that enabled adversary emulation the use of automated attack suites. The CTT project developed tools to measure the efficacy of cyber testing events and share anonymized results for all DoD testing. This technology enabled more thorough testing and improved testing efficiency.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 098 / *Cyberspace Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The CTT project will continue developing and demonstrating technology to address needs in the Cyber-Physical Systems, Tactical Edge Components, and Enterprise Information Systems domains. This includes tools for the automation of creating Virtual Machines (VMs) for reasonable fidelity test universes and tools to enable the use of Formal Methods throughout the Development, Security, and Operations (DevSecOps) process. ***FY 2025 Plans:*** The CTT project will continue developing and demonstrating technology to address needs in the Cyber-Physical Systems, Tactical Edge Components, and Enterprise Information Systems domains. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase from FY 2024 to FY 2025 supports the continual experimental, contractor, developmental, operational, and live-fire testing requirements of warfighter systems operating in cyberspace.			
Accomplishments/Planned Programs Subtotals	14.138	14.707	14.619

	FY 2023	FY 2024
Congressional Add: Test & Evaluation Science & Technology (TRMC) ***FY 2023 Accomplishments:*** Program increase to advance cybersecurity signal generation.	4.000	-
Congressional Adds Subtotals	4.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603941D8Z / *Test and Evaluation Science and Technology*	Project (Number/Name) 099 / *Space Test*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
099: *Space Test*	0.000	32.000	0.830	0.760	-	0.760	0.990	1.010	1.030	1.050	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The space domain has become a competitive, congested, and contested environment dominated by global economics and key to national security. With the creation of the United States Space Force, the Department of Defense (DoD) is prioritizing investments to maintain space superiority and increase resiliency of space systems. Current testing infrastructure and methodologies to assess space system resilience against emerging threats is limited. The Space Test (ST) project mission is to address national test capability gaps by providing accurate, robust, and efficient T&E solutions to successfully develop, validate, and inform the employment of new space control systems. The ST project addresses test technology needs for adequate realism for space systems and aligns with the DoD S&T priority investments and is developing a strategic roadmap and investment strategy to establish live and virtual range environments, develop space and ground-based threat emulation capabilities. The ST project seeks to develop technologies that will enable robust, accurate, and timely T&E of future space weapon systems

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Space Test	0.600	0.830	0.760
Description: The Space Test (ST) project has conducted a test infrastructure analysis of space systems test needs and developed a time-phased investment strategy based on those requirements. Work included engaging the space test community on needs and gaps to ensure traceability of test technology development to strategic objectives. Space Test continued development of a Space Based Telemetry (SBTM) system to support long rang flight test needs. Work continued to develop the Tactical Aerospace Laser Optical Simulator – High Altitude (TALOS-High). The ST project has started a combined NASA/DoD study to identify upgrades to facilitate classified system testing at existing NASA facilities. A mobile space EW testbed has begun phase 1 development with LLNL.			
FY 2024 Plans: The Space Test project SBTM payload/bus integration and initial deployment to support long rang flight test needs is planned. The next phase of the mobile space system test bed is planned to start in FY 2024 to enhance capacity and capability of the test bed. A mobile space EW testbed has begun phased technology development with LLNL.			
FY 2025 Plans: The Space Test project SBTM prototype is planned to launch onboard a SDA vehicle in FY 2025. Continued development of a mobile space EW testbed is planned.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603941D8Z / *Test and Evaluation Science and Technology*	**Project (Number/Name)** 099 / *Space Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Increase from FY 2024 to FY 2025 supports the launch of a SBTM prototype.			
Accomplishments/Planned Programs Subtotals	0.600	0.830	0.760

	FY 2023	FY 2024
Congressional Add: Test & Evaluation Science & Technology (TRMC) ***FY 2023 Accomplishments:*** Program increase to improve space based range tracking.	31.400	-
Congressional Adds Subtotals	31.400	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603945D8Z / *International Innovation Initiatives*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	25.000	125.680	-	125.680	153.898	181.049	181.617	182.201	Continuing	Continuing
079: *AUKUS*	0.000	0.000	25.000	79.811	-	79.811	104.805	129.801	129.802	130.300	Continuing	Continuing
353: *DIANA*	0.000	0.000	0.000	32.815	-	32.815	35.868	37.839	37.930	37.957	Continuing	Continuing
354: *International S&T Engagement Initiatives*	0.000	0.000	0.000	13.054	-	13.054	13.225	13.409	13.885	13.944	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to (1) deter strategic attacks against the United States, and its Allies and partners; (2) deter aggression while being prepared to prevail in conflict when necessary; and (3) building enduring advantages for the future Joint Force.

This program supports the Enhanced Trilateral Security Partnership among Australia, the United Kingdom, and the United States (AUKUS) (Project Code 079), the North Atlantic Treaty Organization (NATO) Defence Innovation Accelerator for the North Atlantic (DIANA) (Project Code 353), and Science and Technology (S&T) International Engagement Initiatives (Project Code 354).

AUKUS will deepen defense capability and technological cooperation by developing and providing joint advanced military capabilities to promote security and stability in the Indo-Pacific region. The program portfolio aligns with the critical technology areas and operational requirements.

The NATO DIANA program will pursue operationally relevant advanced capability co-development, support integration of multi-national capabilities to act as a force multiplier, and test and evaluate promising solutions found across the innovation ecosystem. This complementary program to DIANA will allow the United States to pull successful security solutions from the DIANA effort across the Alliance into availability in the U.S. industrial base and for operational use and aligns with the critical technology areas and operational requirements.

The S&T International Engagement Initiatives program will incentivize the DoD Components, including the Military Services, to engage and/or expand their S&T cooperation with existing partners (e.g., India, Israel) and with those new partners with whom they may be engaged in policy or operational activities but not in the S&T realm. The intent is to consider proposals submitted from the DoD Components. The appropriate leadership will select proposals using a merit-based process that identifies the most promising solutions to operational challenges. The program portfolio aligns with the National Defense Strategy, the critical technology areas, and operational requirements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603945D8Z / *International Innovation Initiatives*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	25.000	25.000	-	25.000
Current President's Budget	0.000	25.000	125.680	-	125.680
Total Adjustments	0.000	0.000	100.680	-	100.680
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustment	-	-	100.680	-	100.680

Change Summary Explanation

The increase of $55.427 million in FY 2025 is the result of internal realignments to support International Innovative Initiatives.
The increase of an additional $45.000 million in FY 2025 for the Australia, United Kingdom, Unites States (AUKUS) Program is to support AUKUS Advanced Capabilities Pillar (Pillar 2) projects and other International Innovation Initiative projects.

A realignment of $9.650 million for Enhanced Trilateral Security Partnership among Australia, United Kingdom, Unites States (AUKUS) from Program Element 0603527D8Z will provide Multi-Classification Level Collaborative Computing Environment; $32.749 million for Defense Innovation Accelerator for the North Atlantic (DIANA) from Program Element 0605798D8Z and Program Element 0603527D8Z will provide support for the North Atlantic Treaty Organization (NATO) DIANA efforts; and $13.028 million from Program Element 0605798D8Z and Program Element 0603527D8Z provides support for International Science & Technology Engagement Initiatives.

Funding increase of $0.253 million for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603945D8Z / *International Innovation Initiatives*	Project (Number/Name) 079 / *AUKUS*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
079: *AUKUS*	0.000	0.000	25.000	79.811	-	79.811	104.805	129.801	129.802	130.300	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to: (1) deter strategic attacks against the United States, and its Allies and partners; (2) deter aggression while being prepared to prevail in conflict when necessary; and (3) build enduring advantages for the future Joint Force. Specifically, the Enhanced Trilateral Security Partnership among Australia, the United Kingdom, and the United States (AUKUS) will deepen defense capability and technological cooperation by developing and providing joint advanced military capabilities to promote security and stability in the Indo-Pacific region.

This program provides funding to pursue operationally relevant advanced capability co-development, support integration of multi-national capabilities to act as a force multiplier, and test and evaluate promising solutions found across the AUKUS innovation ecosystem. The program portfolio aligns with the critical technology areas and operational requirements.

The intent is to consider proposals submitted from the DoD Components and industry and academia partners. The appropriate leadership will select proposals using a merit-based process that identifies the most promising solutions to operational challenges with an emphasis on transitioning technologies to current or future programs of record.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Artificial Intelligence (AI) Development Hub	-	5.000	-
FY 2024 Plans: This project seeks to develop a new cloud-based AUKUS Artificial Intelligence (AI) Development Hub to enable tri-lateral software co-development, with a particular focus on machine learning development pipelines. Once established, this hub will support experimentation and demonstration requirements across the AUKUS Advanced Capabilities Pillar. The initial expenditure will take place in FY 2024, with the project funding to continue from FY 2025 to FY 2028.			
FY 2024 to FY 2025 Increase/Decrease Statement: The decrease is due to a change in priorities for this sub-project. In FY 2025, funding will be realigned to the AUKUS Advanced Capabilities Projects to support projects that develop capabilities to address challenges in the rapidly evolving threat landscape found within the Indo-Pacific region.			
Title: Mission Payloads for Un-crewed Underwater Vehicles (UUVs)	-	10.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603945D8Z / *International Innovation Initiatives*	**Project (Number/Name)** 079 / *AUKUS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: This project seeks to develop payloads to execute specific trilateral missions. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $-10.000 million is due to change in priorities for this sub-project. In FY 2025, funding will be realigned to the AUKUS Advanced Capabilities Projects to support projects that develop capabilities to address challenges in the rapidly evolving threat landscape found within the Indo-Pacific region.			
Title: Cyber Capability Development ***FY 2024 Plans:*** This project seeks to purchase commercial space data to incorporate in an existing project that fuses and processes data derived from distributed platforms to support decision-making. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $-6.000 million is due to change in priorities for this sub-project. In FY 2025, funding will be realigned to the AUKUS Advanced Capabilities Projects to support projects that develop capabilities to address challenges in the rapidly evolving threat landscape found within the Indo-Pacific region.	-	6.000	-
Title: Enhanced Battlespace Awareness ***FY 2024 Plans:*** This project seeks to purchase commercial space data to incorporate in an existing project that fuses and processes data derived from distributed platforms to support decision-making. The initial expenditure will take place in FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $-1.000 million is due to change in priorities for this sub-project. In FY 2025, funding will be realigned to the AUKUS Advanced Capabilities Projects to support projects that develop capabilities to address challenges in the rapidly evolving threat landscape found within the Indo-Pacific region.	-	1.000	-
Title: Engineering and Architecture Studies ***FY 2024 Plans:*** This project seeks to conduct a series of engineering and architecture studies to support the integration of existing and/or future AUKUS capabilities. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	-	3.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603945D8Z / *International Innovation Initiatives*	**Project (Number/Name)** 079 / *AUKUS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The decrease of $-3.000 million is due to change in priorities for this sub-project. In FY 2025, funding will be realigned to the AUKUS Advanced Capabilities Projects to support projects that develop capabilities to address challenges in the rapidly evolving threat landscape found within the Indo-Pacific region.			
Title: AUKUS Multi-Classification Level Collaborative Computing Environment. ***FY 2025 Plans:*** This project seeks to develop a multi-classification level collaborative computing environment to support efforts under the AUKUS Advanced Capabilities Pillar. The initial expenditure will take place in FY 2025, with project funding to continue from FY 2026 to FY 2031. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $10.000 million in FY 2025 supports Enhanced Trilateral Security Partnerships among Australia, United Kingdom, Unites States (AUKUS) from Program Element 0603527D8Z and will provide Multi-Classification Level Collaborative Computing Environment.	-	-	10.000
Title: AUKUS Advanced Capabilities Projects ***Description:*** This project pursues military-operations focused advanced capability co-development, supports integration of multi-national capabilities to act as a force multiplier, and tests and evaluates promising solutions found across all three countries. Funding provides for the solicitation, evaluation, merit-based selection, and execution of new projects to get cutting-edge technological capabilities into the hands of the warfighters. Projects will be selected based upon a tri-laterally agreed-upon governance framework, derived in part from proven DARPA processes. The senior tri-lateral leadership will continuously evaluate and re-prioritize sub-projects based on the evolving threat landscape in the Indo-Pacific region, with the Department ensuring early and complete Congressional notification as the program matures. ***FY 2025 Plans:*** In FY 2025, approved sub-projects include: (1) Establish an Artificial Intelligence Development Hub to accelerate tri-lateral co-development of software with a focus on machine learning; (2) Conduct an international targeting demonstration to improve allied tracking capability for maritime targets for hypersonic weapons; (3) Plan and execute large-scale tri-lateral experiments to enhance our ability to perform coalition operations with mature Resilient Autonomous and Artificial Intelligence Technologies; and (4) Initiate tri-lateral mission planning and compatibility analysis for an air-launched, hypersonic air-breathing cruise missile. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, this sub-project received an increase of $45.000 million to support additional senior trilateral AUKUS leadership approved sub-projects to address challenges in the rapidly evolving threat landscape. New sub-projects are planned to include: (1) Establishing an AUKUS Maritime Autonomy Experimentation and Exercise Series to improve interoperability of un-crewed	-	-	69.811

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603945D8Z / *International Innovation Initiatives*	**Project (Number/Name)** 079 / *AUKUS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
maritime systems among AUKUS partners; (2) Establishing and executing an AUKUS Innovation Prize Challenge; (3) Conducting a heavyweight torpedo interoperability demonstration to enhance AUKUS partners weapons interchangeability and capability; (4) Establishing a maritime digital experimentation facility; and (5) Developing un-crewed underwater vehicle mission payloads.			
Accomplishments/Planned Programs Subtotals	-	25.000	79.811

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Other Funding Summary: This program is also funded in OUSD(Policy), OUSD(A&S) and O&M for Manpower support.

D. Acquisition Strategy

Successful projects support capability acquisition in several ways: technology upgrade insertion in a current platform or program providing greater capability or prolonging life of the system, inform or refine requirements for planned systems, or direct procurement. The AUKUS Innovation Initiative will leverage the Departments most efficient and effective cooperation or acquisition approaches to support the appropriate transition pathway.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603945D8Z / *International Innovation Initiatives*	Project (Number/Name) 353 / *DIANA*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
353: *DIANA*	0.000	0.000	0.000	32.815	-	32.815	35.868	37.839	37.930	37.957	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No. Funding was re-aligned from Program Element 0605798D8Z.

A. Mission Description and Budget Item Justification

To combat the evolving threat and development of critical technologies, the North Atlantic Treaty Organization (NATO) established the Defence Innovation Accelerator for the North Atlantic (DIANA) to leverage dual-use technological advances in Allied centers of innovation to achieve the Alliance's operational requirements, including accelerating the development, testing, and fielding of security technology solutions to achieve an advantage over the evolving threat. The NATO DIANA program only provides non-traditional business partners from Alliance nations with funding to accelerate new technical solutions and commercialization specifically where the technology holds a dual use (commercial and defense in nature) potential. Advanced development and testing to facilitate adoption into U.S. defense programs requires supporting funding for our own labs and test centers to pull that technology into our Defense acquisition ecosystem.

This project enables the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) to assist in accelerating military capability development for U.S. forces as well as our NATO Allies and will expose new U.S. industries to the European markets. Fielding of critical technologies in the proposed areas will have significant positive impact on detecting the enemy first, ensuing effective communications and data exchange between coalition partners, as well as systems developed by different original equipment manufacturers (OEMs), and enabling robotic and autonomous systems to remain on station longer periods of time for greater operation impact. NATO DIANA advances access to technology across larger security challenges. These enhancements will contribute to increasing lethality across the U.S. and NATO military capabilities.

The NATO DIANA initiative will fund dual-use technologies identified through the NATO DIANA challenges found sufficiently mature with the potential for meaningful impact for U.S. forces on the battlefield for continued development, testing, integration, and experimentation and proposes to fund each technology for capability maturation.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defence Innovation Accelerator for the North Atlantic (DIANA)	-	-	32.815
FY 2025 Plans: This project will annually fund dual-use technologies identified through the NATO DIANA challenges found sufficiently mature with the potential for meaningful impact for U.S. forces on the battlefield for continued development, testing, integration, and experimentation and proposes to fund each technology for capability maturation. These technologies will be identified under challenges based on a strategic direction developed with input from the Office of the Under Secretary of Defense for Research			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603945D8Z / *International Innovation Initiatives*	**Project (Number/Name)** 353 / *DIANA*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
and Engineering. Each of the identified technology investments will be supported by end-to-end enablers, including mission and operational analysis, due diligence assessment, testing, and productization. Mission and operational analysis will assess the viability of the proposed technical approach and the mission impact of the technology in relevant operational scenarios. Due diligence assessment will assess the risks associated with the selected technology companies prior to investment, from both an adversarial risk perspective (e.g., foreign ownership, control, and influence) and from a financial risk perspective, as well as continue to monitor adversarial interest and engagement in selected technology companies post-award. Testing and evaluation will establish and quantify measures of performance and measures of effectiveness for the capability prototypes as they mature, to include through participation in operationally relevant demonstration environments. Lastly, productization will further mature qualified prototype capabilities, which sufficiently meet the measures of performance and effectiveness thresholds, for commercialization and operational use. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $32.749M from FY 2024 to FY 2025 is the result of realigning $1.080M of Defence Innovation Accelerator for the North Atlantic (DIANA) from Program Element 0605798D8Z Project Code 797 to support transparency of international programs plus an increase of $31.669M to support the rapid growth of expected output of the DIANA program, increasing industry participation to an anticipated excess of 200 companies in FY 2025. The increased funding will provide support to awarded United States (U.S.) companies, introduce U.S. industries to the European markets, and enable labs/test centers to bring critical technology capabilities to the warfighter. These companies will focus on developing dual-use technology solutions in critical technology areas such as artificial intelligence, autonomy, quantum, biotechnology, space, novel materials and manufacturing, energy and propulsion, and next-generation communications networks.			
Accomplishments/Planned Programs Subtotals	-	-	32.815

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Successful projects support capability acquisition in several ways: technology upgrade insertion in a current platform or program providing greater capability or prolonging life of the system, inform or refine requirements for planned systems, or direct procurement. NATO DIANA will leverage the Department's most efficient and effective cooperation or acquisition approaches to support the appropriate transition pathway.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603945D8Z / *International Innovation Initiatives*	Project (Number/Name) 354 / *International S&T Engagement Initiatives*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
354: *International S&T Engagement Initiatives*	0.000	0.000	0.000	13.054	-	13.054	13.225	13.409	13.885	13.944	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No. Funding was re-aligned from Program Element 0605798D8Z and Program Element 0603527D8Z to provide support for International Science & Technology Engagement Initiatives.

A. Mission Description and Budget Item Justification

As the importance of international science and technology (S&T) cooperation with our Allies and partners grows in the coming years, this project will incentivize the DoD Components, include the Military Services, to engage and/or expand their S&T cooperation with existing partners and with those partners with who they may be engaged in policy or operational activities but not in the S&T realm. In addition, this project will allow the International Outreach and Policy office to meet new and expanded requirements for substantive, administrative, and operational activities in support on international defense S&T cooperation.

The intent is to consider proposals submitted from the DoD Components. The appropriate leadership will select proposals using a merit-based process that identifies the most promising solutions to operational challenges with an emphasis on transitioning technologies current or future programs of record.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: International S&T Engagement Initiatives	-	-	3.054
FY 2025 Plans: This project will annually support additional international S&T projects or DoD Component, including Military Service, participation in OSD-led activities (e.g., workshops, delegation visits). For new projects, the intent is to consider project proposals submitted from the DoD Components. The appropriate leadership will select proposals using a merit-based process that identifies the most promising solutions to operational challenges with an emphasis on transitioning technologies to current or future programs of record.			
FY 2024 to FY 2025 Increase/Decrease Statement: Funding was re-aligned from Program Element 0605798D8Z and Program Element 0603527D8Z to provide support for International Science & Technology Engagement Initiatives.			
Title: U.S. – Israel Trusted Artificial Intelligence (AI) and Autonomy Demonstration	-	-	6.000
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603945D8Z / *International Innovation Initiatives*	**Project (Number/Name)** 354 / *International S&T Engagement Initiatives*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
This project seeks to baseline edge capabilities of intelligence autonomous systems in an operational environment; co-develop distributed AI architectures, hardware and algorithms to optimize edge intelligence in Detached, Degraded, Intermittent, and Low-bandwidth (DDIL) environments; and jointly develop an interoperable simulation infrastructure that can support re-training of intelligence autonomous systems at the edge. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding was re-aligned from Program Element 0605798D8Z and Program Element 0603527D8Z to provide support for International Science & Technology Engagement Initiatives.			
Title: U.S. – Italy Human-Centric Autonomy Development ***FY 2025 Plans:*** This project seeks to integrate Italian robotic mobility and maneuver capabilities with U.S. trust and multi-level abstraction efforts in order to advance human-autonomy teaming using integrated sensors. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding was re-aligned from Program Element 0605798D8Z and Program Element 0603527D8Z to provide support for International Science & Technology Engagement Initiatives.	-	-	4.000
Accomplishments/Planned Programs Subtotals	-	-	13.054

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603950D8Z / *National Security Innovation Network*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	111.066	77.032	21.575	21.322	-	21.322	21.202	21.644	22.115	22.558	Continuing	Continuing
845: *National Security Innovation Network*	111.066	77.032	21.575	21.322	-	21.322	21.202	21.644	22.115	22.558	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build a Sustainable and Long-Term Advantage and Build a Resilient Joint Force and Defense Ecosystem.

The National Security Innovation Network (NSIN) activities build networks of innovators that generate new solutions to national security problems. On April 4, 2023, the Secretary of Defense issued a memorandum re-elevating the Defense Innovation Unit (DIU) Director as a direct report to the Secretary of Defense. In July 2023, the DIU Director announced a reorganization that integrated NSIN into DIU to maximize strategic impact.

DIU will continue to develop and execute programs that engage these networks to solve the problems of Department of Defense (DoD) entities from the Military Services, Joint Staff, Combatant Commands, Defense Agencies, and Field Activities. These programs are in line with Section 231 of the Fiscal Year (FY) 2022 National Defense Authorization Act (NDAA) requirement to build a "pilot program on the use of private sector partnerships to promote technology transition," Section 219 of FY 2021 NDAA to establish national security innovation partnerships, and Section 225 of FY 2018 NDAA guidance for the Secretary of Defense "to support national security innovation and entrepreneurial education programs."

The Regional Network Team is responsible for building the networks of innovators. The physical network is spread across nine (9) regions spanning the Continental United States and reaching out to Hawaii and Alaska. Regional engagement activities are led by nine (9) Regional Directors supported by additional Regional Network Team members able to reach into critical venture innovation hubs throughout the country including: Boston, MA; New York City, NY; Washington, DC; Orlando, FL; Chicago, IL; St. Louis, MO; Austin, TX; Denver, CO; Seattle, WA; San Diego, CA; and San Francisco, CA. Additional members of the Regional Network Team currently include Regional Engagement Principals (REPs) that are embedded in - and have responsibility for - critical innovation ecosystems within each region including universities and other tech hubs. This team will be integrated with DIU's commercial and regional engagement efforts to reduce duplication, strengthen national outreach, and foster cross-pollination of activities across the technological maturity spectrum.

DIU will strengthen pathways for talent to serve and facilitate access to early-stage companies to engage with the Department through the following programmatic portfolios:

•The Talent Portfolio provides opportunity for individuals outside the traditional federal talent pipeline to serve our country and solve real-world national security, technology, and policy challenges. By bridging the gap between students, academics, and entrepreneurs to engage with the Department of Defense (DoD), DIU is

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603950D8Z / *National Security Innovation Network*

helping build a deep bench of diverse, qualified civilian and military workers to preserve our competitive emerging technology advantage with resilient personnel trained for the unpredictable global operating environment.

•The Venture Portfolio develops and executes programs and services to facilitate access to emerging technology as it engages the talents of fast-moving innovators and non-traditional problem-solvers. The Venture Portfolio works directly with dual-use early-stage ventures emerging from both the academic and venture community who have solutions that address DoD problems. The Venture Portfolio creates advantage for defense innovation through customer discovery and solution adoption.

•The Transition Cell bridges the gap between post-program participation and solution implementation, facilitates market research within the non-traditional early-stage venture ecosystem, and provides education and resources to strengthen and fortify dual-use business maturity of alumni ventures, and provides materials and consultation to the DoD on the various authorities and vehicles available. The Transition Cell enables the identification of reusable pathways to get solutions to the place where they will have the greatest effect.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	79.268	21.575	21.279	-	21.279
Current President's Budget	77.032	21.575	21.322	-	21.322
Total Adjustments	-2.236	0.000	0.043	-	0.043
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.228	-			
• Cancelled Account	-0.008	-	-	-	-
• Program Adjustment	-	-	0.043	-	0.043

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 845: *National Security Innovation Network*		
Congressional Add: *Secure Email Access*	1.240	-
Congressional Add: *DoD mission acceleration centers*	50.000	-
Congressional Add: *Adaptive Threat Force Cyber Cell*	1.000	-
Congressional Add: *Hacking 4 Defense*	5.000	-
Congressional Add Subtotals for Project: 845	57.240	-
Congressional Add Totals for all Projects	57.240	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603950D8Z *I National Security Innovation Network*

Change Summary Explanation

Slight decrease of $0.081 million reflects minor budget fluctuations. A reduction of $0.215 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.043 million for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603950D8Z / *National Security Innovation Network*	Project (Number/Name) 845 / *National Security Innovation Network*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
845: *National Security Innovation Network*	111.066	77.032	21.575	21.322	-	21.322	21.202	21.644	22.115	22.558	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

DIU will execute a range of programs and activities to enhance DoD's access to technologists and entrepreneurs for the purposes of improving its talent pool, enable collaboration with universities and the early-stage venture community to develop novel concepts and solutions for end-user problems and requirements, and prototype and test new technologies to place them on the path to becoming programs of record or integrated with existing platforms.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: National Security Innovation Network (NSIN)	19.792	21.575	21.322
Description: Following the FY 2023 reorganization, DIU will take on the mission to build networks of innovators that generate new solutions to national security problems. DIU will continue ongoing efforts to develop and execute programs that engage these networks to solve the problems of Department of Defense (DoD) entities from the Military Services, Joint Staff, Combatant Commands, Defense Agencies, and Field Activities.			
FY 2024 Plans: This initiative will continue to: •Pilot additional program concepts in partnership with the DoD Service Labs, the OSD Office of Small Business Programs, and OSD(Research and Engineering), including efforts to increase participation of non-traditional personnel and organizations in the Defense innovation ecosystem. •Conduct at least 10 national prize challenges on areas of critical need for the Department of Defense. •Further integrate the Regional Network Team activities across the US, and in partnership with DIU's Global Partnerships team, explore global coverage in direct alignment with the DIU 3.0 Strategy. •Establish initial 5 strategic locations for Defense Innovation OnRamp Hubs and explore expansion to additional sites to meet DoD warfighter needs.			
FY 2025 Plans: Under the reorganization, this initiative will: •Establish a coherent front-door for dual-use and emerging technology companies to access the Department of Defense in partnership with the Office of Small Business Programs and Service innovation organizations. •Expand successful outreach pilots to HBCU/MSIs •Strengthen the talent pipeline to serve our country and solve real-world national security, technology, and policy challenges.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603950D8Z / *National Security Innovation Network*	**Project (Number/Name)** 845 / *National Security Innovation Network*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
•Facilitate and accelerate global exchange of commercial technology and expertise via prize challenges, dual-use accelerator programming, and other programming. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Slight decrease of $0.081 million reflects minor budget fluctuations. A reduction of $0.215 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.043 million for Economic Assumptions.			
Accomplishments/Planned Programs Subtotals	19.792	21.575	21.322

	FY 2023	FY 2024
Congressional Add: Secure Email Access ***FY 2023 Accomplishments:*** Scoped and identified location of future secure facility at the University of Rhode Island. Identified process steps needed to fully fund and execute this program. In the second year of execution continue the establishment of a pilot program designed to enable access to a secure facility at URI that will be available to “cleared” faculty researchers, visiting government researchers, and industry partners.	1.240	-
Congressional Add: DoD mission acceleration centers ***FY 2023 Accomplishments:*** The Defense Innovation OnRamp Hubs will give the DoD the opportunity to co-locate and collaborate with non-profits, academia, and a broad spectrum of private industry and provide programming to: (1) Facilitate Collaborative Interaction with the DoD, Academia, and Venture Communities; (2) Broaden the National Security Industrial Base; and (3) Mature the Network. Initial funding provided by FY 2023 congressional add. In FY 2025, funding for Defense Innovation OnRamp Hubs will be provided to the DIU PE 0603342D8Z. •Responded to Section 231 of the NDAA for FY 2022 requirement to build a "pilot program on the use of private sector partnerships to promote technology transition”. DIU will provide mechanisms for data capture of small business interest in working with the DoD. •Funded initial programming and tech scouting activities to coincide with the development of the OnRamp Hubs in several locations. •Placed first five locations on contract for OnRamp Hub site standups in September 2023. In second year of execution, plan to: •Employ $32M in FY 2023 funding to expand local community outreach via Defense Innovation OnRamp Hubs, including but not limited to standup of the initial five sites, associated required programmatic support and options for expansion of scope and locations in line with potential for DoD strategic impact. •Conduct programming to support the OnRamp Hubs, through accelerators, prize challenges, and mentoring activities designed to support early-stage ventures as they navigate the NSIB	50.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603950D8Z / *National Security Innovation Network*	**Project (Number/Name)** 845 / *National Security Innovation Network*

	FY 2023	FY 2024
•Continue to support the development of a national network of geographically dispersed and strategically located innovation defense ecosystems to seed new talent and technology into the Department. •[This funding has been shifted to the DIU PE line 0603342D8Z in the President's Budget Request for Fiscal Year 2025 in alignment with the closer integration of NSIN into DIU to maximize strategic impact.]		
Congressional Add: Adaptive Threat Force Cyber Cell ***FY 2023 Accomplishments:*** The Adaptive Threat Force Cyber Cell conducted local challenges and support at Camp Shelby during Thunderstrike.	1.000	-
Congressional Add: Hacking 4 Defense ***FY 2023 Accomplishments:*** Executed 28 Hacking 4 Defense (H4D) classes at 20 major universities within the Continental United States and Hawaii in the 2023-2024 academic year.	5.000	-
Congressional Adds Subtotals	57.240	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	256.567	194.019	171.668	167.279	-	167.279	168.756	175.969	178.844	182.205	Continuing	Continuing
455: *OECIF*	141.112	102.415	171.668	51.130	-	51.130	51.575	53.771	54.644	55.670	Continuing	Continuing
456: *ES and Tactical Micro-Grids*	48.748	28.703	0.000	40.025	-	40.025	40.381	42.110	42.800	43.605	Continuing	Continuing
457: *Power Beaming and Space Solar*	28.222	26.561	0.000	46.186	-	46.186	46.596	48.591	49.388	50.316	Continuing	Continuing
458: *Nuclear*	38.485	36.340	0.000	29.938	-	29.938	30.204	31.497	32.012	32.614	Continuing	Continuing

Note

New Start (Y/N): No

Beginning in FY 2024, Program Element (PE) funding was realigned under four new project codes to correctly align PE funding in support of the Department's strategic priorities. The new project codes are: (1) P455 OECIF; (2) P456 ES and Tactical Micro-Grids; (3) P457 Power Beaming and Space Solar; and (4) P458 Nuclear. The prior year funding project codes did not continue after FY 2023 though the overarching goals of the program element are the same. The four new project codes refocus the PE and provide traceability to the Department's Operational Energy Strategy ensuring that Joint Forces have the energy needed to fight and win in contested environments.

A. Mission Description and Budget Item Justification

Operational Energy underpins the future force requirements for increased mobility, extended range, greater integration across services and coalition partners, and increased resiliency to fight and win in contested environments. OECI's mission is to increase the effectiveness of Joint, DOD-wide, operational energy programs, avoid duplication, identify and close technology gaps, and maximize success in research efforts. OECI leads the community to common, interoperable technology advances that support warfighting overmatch through extended reach, extended range, deliberate implementation of silent operations, silent watch, signature management (thermal and acoustic), power and thermal management innovations to enable next generation weapons advances (directed energy weapons), and reduced exposure to warfighter attacks in contested logistics.

The Operational Energy Capability Improvement (OECI) program is the Department's dedicated investment in Operational Energy Advanced Technology Development addressing joint operational energy requirements. The OECI program matures and demonstrates first-of-its-kind advanced operational energy technologies across warfighting platforms and domains. Technology innovations are focused on four key areas: (1) OECIF; (2) ES and Tactical Micro-Grids; (3) Power Beaming and Space Solar; and (4) Nuclear. The OECI's execution approach of competitive selection to Defense Department laboratories strengthens technical depth within the DoD and fosters broad industry engagement, allowing for implementation of other transaction authorities where appropriate for expediting technology development of warfighter solutions.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*

Operational Energy technology is a critical enabler for next generation weapon systems, platforms, and the agile and integrated operations required for all four 2022 National Defense Strategy (NDS) priorities. In addition, this PE directly supports the NDS priority of building a resilient Joint Force and defense ecosystem through modernization of key capabilities for operational reach in contested environments providing a sustainable and long-term advantage against adversaries.

This Program Element supports the Office of the Under Secretary of Defense for Acquisition and Sustainment's (OUSD(A&S)) Operational Energy Strategy. The four lines of effort defined in Department's OE Strategy include: Energy Demand Reduction; Energy Substitution and Diversification; Supply Chain Resilience; and Enterprise-wide Energy Visibility. The OECI Program matures first-of-its-kind technology that will ensure that Joint Forces have the energy needed to fight and win in contested environments.

Per the 2021 NDAA section 324, this PE activity is being led by the Under Secretary of Defense for Acquisition and Sustainment.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	199.142	171.668	176.399	-	176.399
Current President's Budget	194.019	171.668	167.279	-	167.279
Total Adjustments	-5.123	0.000	-9.120	-	-9.120
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.123	-			
• Defense-Wide Topline Adjustment	-	-	-9.120	-	-9.120

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 455: *OECIF*		
Congressional Add: *Adaptive Aerodynamic Surfaces Technology*	5.000	0.000
Congressional Add Subtotals for Project: 455	5.000	0.000
Project: 456: *ES and Tactical Micro-Grids*		
Congressional Add: *Power & Thermal Management Subsystem Technologies for High Energy Laser Activities*	7.000	-
Congressional Add Subtotals for Project: 456	7.000	-
Project: 457: *Power Beaming and Space Solar*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Laser Wireless Power Transfer*	5.000	0.000
Congressional Add Subtotals for Project: 457	5.000	0.000
Project: 458: *Nuclear*		
Congressional Add: *TRISO*	10.000	-
Congressional Add: *Distributed Maritime Energy Research*	2.000	0.000
Congressional Add Subtotals for Project: 458	12.000	0.000
Congressional Add Totals for all Projects	29.000	0.000

Change Summary Explanation

The OECI program received an $18 million reduction for excessive growth. As a result, OECI was not able to advance innovations related to: Hydrogen technology for maritime lift and tactical vehicle fuel cells; additional technical pathways associated with waste-to-energy conversion; or study the radioisotope supply chain in depth.

Congressional additions to the program included: (1) $8 million program increase which enabled investment in contested logistics capabilities for arctic operations, and additional projects in nuclear fuels; $2 million addition for distributed maritime energy research to project 455; $5 million addition for laser wireless power transfer to project 457; and $10 million addition for TRISO advanced fuels to project 458. OECI appreciates congressional trust for execution of unplanned targeted funds, and would appreciate congressional patience for financial performance as we seek to execute congressional direction.

The program received two congressionally requested reprogrammings: (1) $7 million Power and thermal management subsystem technologies for high energy laser activities (to Navy – in process); and (2) $5 million Adaptive aerodynamic surfaces technology (to USAF - complete). FY 2023 resulted in a total increase of $7 million across the OECI projects.

FY 2024 planned program decrease reflects maturation of TRISO advanced fuel production. OECI remains supportive and is positioned to execute targeted investments from congress.

FY 2025 program increase enables rapid response to emerging operational energy technology insights derived from ongoing operations and keep pace with adversary advancements . Additional investments will focus on operational energy computing capabilities to the tactical edge, power and thermal management advancements to enable next generation high power weapon systems, space qualifications of low-cost high efficiencies solar array diversified energy sources, and support rapid spaceflight demonstrations of Stirling energy conversion systems.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	Project (Number/Name) 455 / *OECIF*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
455: *OECIF*	141.112	102.415	171.668	51.130	-	51.130	51.575	53.771	54.644	55.670	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the OECI is to fund operational energy innovation that will improve DOD operational effectiveness via targeted S&T investments. This project focuses those investments on technologies that enable operations in contested environments and bring energy awareness into the DOD command and control architectures. S&T efforts harness energy data and information to improve decision making as part of Joint All-Domain Command and Control (JADC2). S&T investments in this project: 1) Improve mission-planning tools and analytics; 2) Increase operational control and decision making for power and energy at all warfighting echelons; 3) Provide state of the art metering and monitoring of platform / system capabilities; 4) Develop operational energy modeling and simulation tools that quantify operational and climate impacts; 5) Bring power and energy-innovation knowledge and analytics to warfighters and senior leaders to inform future acquisition, sustainment, and budget decision making; and 6) Deliver foundational training and education on power and energy-innovation across the military and S&T communities. All six technology areas within this project support the Department's OE Strategy Enterprise-wide Energy Visibility line of effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Contested Logistics and Battlespace Awareness	97.415	171.668	51.130
Description: In FY 2023, OECI: addressed key operational energy gaps for battlespace awareness; enabled cyber secured operational energy data and information in and around the battlespace; conducted analysis of emerging operational energy technologies that impact dismounted warfare; optimized energy storage solutions for arctic operations; provided a framework for OE technology investments transparency and accountability; and evaluated energy impacts of joint logistics resilience and sustainability in ongoing operations.			
FY 2024 Plans: There are 15 projects/studies continuing from FY 2023 and prior years. In FY 2024, OECI is awarding approximately 13 new start projects to advance Joint capabilities and improve battlespace awareness for the warfighter in contested environments. New technology maturation projects are focusing on advancements to energy metering and monitoring, sensing, capturing end-to-end tactical fuel data, and optimizing UXV planning and energy consumption.			
FY 2025 Plans: In FY 2025, OECI aims to deliver: 1) improved operational energy command and control of UXVs – automating logistics resupply systems; 2) Improved precision for energy efficient, long range delivery systems; 3) Secure communications using private blockchain networks; 4) Real time command and control of electrical power systems 5) Power monitoring with anomaly detection and analysis tools; 6) Improved war gaming focused on real time energy consumption and 7) Low-cost, attritable, energy distribution vehicles for a contested battlefield.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	**Project (Number/Name)** 455 / *OECIF*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2025, OECI will continue development of: 1) Technology maturation projects focusing on advancements to energy metering and monitoring, sensing, real-time energy data analytics, mission planning tools, and cyber integration for OE data integrity at all echelons; 2) New analytical studies focusing on innovative energy solutions, energy cyber security needs, and using AI/ML tools to incorporate operational energy into the JADC2 network; 3) New modeling and simulation projects focusing on improving user interface and user experience (UI/UX) with energy management software delivering predictive consumption and resupply for the warfighter. In FY 2025, OECI will award projects to advance disruptive technologies in contested logistics and battlespace awareness. Current operational energy lessons learned highlights the need for investment in low energy demand autonomous systems, such as drones and wearable AI-based microelectronics and software. Project investments will focus on the new generation of sensors to monitor, identify, and alert on “digital threats” to energy and power generation, transport, storage, and infrastructure. Technology maturation of AI/ML tools will improve the ability of US forces and Combatant Commands to integrate critical OE considerations into planning tools. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Programmatic increase is required for Operational Energy innovations to increase energy awareness by extending computing capabilities to the tactical edge. Historical demand for project investments have exceeded 7:1 (proposals submitted vs funded). With additional funding, CLBA would focus on: improving model and simulation tools, data, and scenarios to enhance war fighters and senior leader decision making across the operational energy trade-space.			
Accomplishments/Planned Programs Subtotals	97.415	171.668	51.130

	FY 2023	FY 2024
Congressional Add: Adaptive Aerodynamic Surfaces Technology	5.000	0.000
FY 2023 Accomplishments: OECI patterned with DIU and Airforce for state of the art industry Adaptive Aerodynamic Surfaces Technology. Contracting action with DIU complete October 2023.		
FY 2024 Plans: The department is prepared to run a competition to down select to a single vendor in FY 2024.		
Congressional Adds Subtotals	5.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	**Project (Number/Name)** 455 / *OECIF*

C. Other Program Funding Summary ($ in Millions)

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	Project (Number/Name) 456 / *ES and Tactical Micro-Grids*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
456: *ES and Tactical Micro-Grids*	48.748	28.703	0.000	40.025	-	40.025	40.381	42.110	42.800	43.605	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project drives innovations improving operational energy resilience – a critical enabler for operational flexibility, freedom of maneuver, and mission assurance. Technical areas of this project include energy diversification, standardization, interoperability, and energy components enabling next generation warfighting capabilities. Energy diversification investments focus on hybrid and electrification technologies, hydrogen and PEM fuel cell technologies, expanding energy sources through innovative production, and providing power, fuel, and heat from waste. Standardization and interoperability investments focus on tactical micro-gridding, electrical and communication standards, and energy component commonality for multiplatform applications. Next generation energy component capability investments are focusing on high power weapons enablers, advanced energy storage devices, power and thermal management technologies, and energy innovations optimized for Arctic operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Operational Energy Resilience	21.703	0.000	40.025
Description: In FY 2023 OECI successfully completed operational energy resilience projects delivering innovative next generation warfighting capabilities emphasizing agile energy management solutions and extending range while minimizing generator dependency by advancing microgrid technologies.; FY 2023 projects advanced hydrogen and synthetic/alternative fuel production; increased access to improved battery technologies, enhanced visibility of DoD battery demand requirements, and increased operating temperature ranges (storage and power) for Arctic environments Additionally, these innovations are positively addressing supply-chain competition concerns. OECI competitively awarded 22 new projects in FY 2023 improving resiliency of tactical operations. The projects focused on battlefield recharging for hybrid/electric platforms, evaluation of commercial EV batteries for DE weapons, advanced batteries and hybrid architectures extending range and silent watch capabilities for tactical vehicles, grid resiliency improvements involving tactical vehicle-enabled microgrids for ground power and weapon system payloads. Project 456 included 29 active projects and studies in FY 2023.			
FY 2024 Plans: In FY 2024 OECI is developing resilient production, storage, delivery, and use of fuels and energy storage technologies at/near the tactical edge including: 1) Cold-weather solutions for the Arctic and reduced-cost logistical transportation solutions; 2) First-of-a-kind H2 powered high-altitude balloons enabling over-the-horizon communication, increasing autonomous underwater vehicle (AUV) vigilance using an H2/O2 battery-recharging system, and hybrid airships supporting INDOPACOM operational energy gaps;			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	**Project (Number/Name)** 456 / *ES and Tactical Micro-Grids*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
3) Completion of synthetic fuel aircraft engine qualification; and 4) Additional innovation to reduce operational energy demand providing power, fuel, and heat from waste. Additionally, OECI is developing DOD's operational resilience through tactical vehicle hybridization and electrification – providing the warfighter with essential battlefield capability. OECI technology innovations are: 1) Providing Services' ground forces and special operations forces the ability to leverage tactical silent watch/silent running, tactical sprint, improved signature management (thermal and acoustic), and reducing reliance on costly and dangerous fuel supply convoys; 2) Boosting resilience, by enabling exportable power from manned-unmanned teaming, and 3) Enabling energy use optimization through vehicle-to-grid and vehicle-to-vehicle technologies providing ground power and payload (DE weapons) power. ***FY 2025 Plans:*** In FY 2025, OECI's vision is to continue maturing energy interoperability creating energy redundancies and building an energy architecture across the spectrum (hydrogen, batteries, renewables, energy harvesting) to include all austere operational environments. Projects will focus on developing improved energy resilience and endurance across land, air and sub-sea with continued emphasis on maturing fuel cells, developing all-electric hybrid airships, and increasing warfighter range and agility through fuel diversity. Project emphasis will be on disruptive technologies that improve resiliency by reducing logistical support and increasing operational persistence supporting warfighters in contested environments. Technical focus on hybrid architectures, diversified energy sources (advanced energy storage, hydrogen, etc.), and energy distribution advancements will also enable next generation weapon capabilities such as directed energy weapons. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Programmatic increase is required for Operational Energy innovations in power and thermal management advancements enabling directed energy weapons. Historical demand for project investments have exceeded 7:1 (proposals submitted vs funded). With additional funding, OECI would combine waste-to-energy investments with synthetic fuel and Hydrogen production – creating the ability to produce in-situ fuel at-the-edge.			
Accomplishments/Planned Programs Subtotals	21.703	0.000	40.025

	FY 2023	FY 2024
Congressional Add: Power & Thermal Management Subsystem Technologies for High Energy Laser Activities	7.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	**Project (Number/Name)** 456 / *ES and Tactical Micro-Grids*

	FY 2023	FY 2024
FY 2023 Accomplishments: Per the request of Senator Patty Murray, Washington State, OECI completed a topline transfer from PE 0604055D8Z to the Office of Naval Research PE 0603801N. OECI is not executing this congressional add.		
Congressional Adds Subtotals	7.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	Project (Number/Name) 457 / *Power Beaming and Space Solar*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
457: *Power Beaming and Space Solar*	28.222	26.561	0.000	46.186	-	46.186	46.596	48.591	49.388	50.316	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project drives innovations that reduce operational energy demand, increase efficiencies for aviation and space domains, and reduce risks by providing next-generation power and clean energy delivery options (power beaming) for military effectiveness in contested environments. Aviation efficiency investments focus on innovations to gain efficiency and lower energy consumption through advances in aviation powerplants (e.g., electrification, hybridization, etc.), flight software planning tools, inflight algorithms, composite airframe structures, proton exchange membranes (PEM), hydrogen fuel cells (H2), and sustainable aviation fuels (SAF), among other emerging technologies. Space efficiencies include power and energy (generation, transmission, and storage) for space-access (platform launch and orbital transfer), platform maneuver and station keeping/resupply, platform operation capabilities that improve energy efficiency, lower energy consumption, and/or mitigate environmental impact, and innovations that dramatically reduce the cost of production and/or launch-weight of critical space components.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Operational Energy Demand Reduction	21.561	0.000	46.186

Description: In FY 2023, OECI successfully completed operational energy efficiency projects that delivered innovative next generation warfighting capabilities including: demonstration of the first in-space laser power beaming experiment – a critical and essential component to multi-domain energy delivery capabilities; world record-setting evolution of space-based photovoltaics; multi-domain power beaming/wireless power transfer that increased efficiencies over longer distances at greater power levels; completion of supply chain studies into materials, battery technology, graphene and novel innovation pathways for alternative fuels, and adaptive aerodynamic surfaces that drive efficiencies in aviation platforms.

OECI competitively awarded 28 new projects in FY 2023 to increase aviation efficiencies and space efficiencies and reduce demand of fossil fuels in contested environments.

FY 2024 Plans:

Project 457 will remain focused on aviation efficiencies, next generation power delivery, and space efficiencies. Technical operational energy innovations will concentrate on: aircraft development to dramatically decrease aerodynamic drag (reduce fuel demand) with the added benefit of reduced radar observability; extending aircraft range including secondary benefits in silent loiter/reconnaissance capabilities; energy diversification away from fossil fuels for aviation and support equipment; hydrogen fuel cells and hydrogen powered technology to improve resiliency with positive climate impacts; increase power beaming/wireless

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	**Project (Number/Name)** 457 / *Power Beaming and Space Solar*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
energy capabilities with continued testing of next-generation photovoltaics (perovskites); improving efficiencies of wireless power transfer; and reducing weight and driving affordability of photovoltaic development for space applications. ***FY 2025 Plans:*** In FY 2025, OECI will deliver: 1) Increases to distance and power efficiencies for power beaming (laser/microwave/mmWave); 2) UAV advances in micro-generation and propulsion driving down energy consumption; 3) Innovative wing designs that create significant increases in energy efficiencies of aviation platforms – reducing operational and mission risk by decreasing logistics demand; 4) Substrate reuse and epitaxial liftoff techniques commercialization for high demand space and terrestrial PV cell production – driving down cost; and 5) The first ever perovskite photovoltaic panel with 10-year stability in space environments with greater than 20% AM0 efficiency and at less than $1/W. In FY 2025, OECI will continue to: 1) Advance aviation platforms towards greater automation at scale, and electrification and hybridization of aerial platforms; 2) Explore alternative fuel engines (hydrogen) and energy storage (batteries and fuel cells) at greater energy density to increase on-station time for aerial applications; 3) Make incremental improvements in aviation efficiencies by harvesting electricity from wing vortices, decreasing wire/cable weight through intelligent switching, light-weighting structural aerodynamic materials, and advancing efficient oil-less turbines; 4) Advance energy sensing capabilities for terrestrial and space applications; 5) Enable zero-volt energy storage capability for long term storage and operations; and 6) Develop configurable energy receivers and transmitters for energy sharing between UAV swarms in the near-field and beyond line of sight. In FY 2025, OECI will award new projects focused on disruptive technologies for autonomous space and aviation applications for driving down both energy demand and costs. Opportunities will include providing continuous and efficient on-demand electrical power, increasing capabilities to sense power usage, and energy harvesting of free-space power across the battlespace. Experimenting with practical applications of advanced aviation structure designs and materials. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Programmatic increase is required for space qualification of low-cost high efficiency solar arrays. If additional programmatic increase is made, it will be directed towards hydrogen propulsion systems (hydrogen turbines, and hydrogen internal combustion engines) for aviation platforms, lunar and cislunar power systems, and in space refueling technologies.			
Accomplishments/Planned Programs Subtotals	21.561	0.000	46.186

	FY 2023	FY 2024
Congressional Add: Laser Wireless Power Transfer	5.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	**Project (Number/Name)** 457 / *Power Beaming and Space Solar*

	FY 2023	FY 2024
FY 2023 Accomplishments: The $5 million add for Laser Power Beaming has enabled novel thermal management for wireless power beaming, photovoltaic cell & array design improvements, and rapid prototyping of key components increasing power, distance, and efficiency. ***FY 2024 Plans:*** In FY 2024 efforts will focus on improving the efficiency of the beam receiver through development of multi-junction photovoltaic cells matched to the wave length of the laser transmitter.		
Congressional Adds Subtotals	5.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	Project (Number/Name) 458 / *Nuclear*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
458: *Nuclear*	38.485	36.340	0.000	29.938	-	29.938	30.204	31.497	32.012	32.614	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project leads DOD innovations enabling nuclear power across the battlespace. Energy diversification such as nuclear power will greatly reduce the need for moving energy over long distances and will help counter adversary capabilities to track and target our logistics forces.

Technical areas of this project include nuclear fuel fabrication processes, energy conversion methods, novel power generation and energy storage technologies, and analytical study and strategy development. Nuclear fuel investments include establishing new and novel fission fuel production (e.g. TRISO), fission fuel moderators, repurposing waste-fuel radioisotopes, and prioritizing efficient use-of and access-to national stockpiles of radioisotopes. Energy conversion investments include steady state energy conversion methods such as thermoelectric and betavoltaic systems; and dynamic methods such as turbine-alternator-compressors, and Stirling engines. Analytical and regulatory study investments focus on shaping policy and strategy for viable nuclear technologies for terrestrial, spaceflight, and maritime applications.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Nuclear Power	24.340	0.000	29.938

Description: In FY 2023, this project successfully established and optimized the first and only US commercial TRISO fabrication line which is foundational to the demonstration of the first advanced reactor funded by DOD - Pele. The successful demonstration of an advanced nuclear reactor for defense applications positions US military forces in a globally advantageous position over adversaries by providing safe, reliable, and transportable power to any location on earth. This project also finalized necessary agreements between performers and the Department of Energy (DOE) for procurement of national isotope stockpiles for technology development of new spaceflight and terrestrial nuclear defense platforms. P458 completed preliminary experimental methods of isotope production for aerospace propulsion applications, and also completed a space nuclear strategy study to better-inform near-term adoption of nuclear power in the theater of earth-orbit and cis-lunar space.

OECI competitively awarded 4 new projects in FY 2023 to develop nuclear technologies in future capabilities for radioisotope power systems (RPS) for subsea power generation and transmission, RPS-powered spaceflight power beaming capabilities, spaceflight sensing devices, innovative moderator materials for fission reactors, and super-critical CO2 energy conversion technologies.

FY 2024 Plans:

In FY 2024, this project is accomplishing multiple nuclear technology milestones such as novel isotopic heat and power source utilization in austere environments, improved thermal energy conversion technologies such as Stirling engines, enhancing nuclear

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	**Project (Number/Name)** 458 / *Nuclear*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
coated particle fuels, first-of-a-kind innovative mobile nuclear systems for multiple national defense initiatives. FY 2024 projects are delivering terrestrial experimentation of an RPS platform in a simulated spaceflight environment (e.g., vacuum chamber), a separate RPS in a simulated subsea environment, an electrically heated demonstration of an airbreathing nuclear propulsion system, and fabrication and testing of novel moderator materials for coated particle fuel reactors. Multiple regulatory and licensing studies are completing and laying the foundation for near-term adoption and use of nuclear power for defense applications in direct support of DOD installation priorities along with far-term opportunities for innovative nuclear regulations for molten salt reactors. New projects are continuing to invest in innovative and competitive technology development, and DOD policy / regulatory roadmaps, along with first-of-a-kind nuclear technologies for warfighters across all domains (space, air, ground, marine).			
FY 2025 Plans: In FY 2025, OECI will deliver the first spaceflight test of a DOD RPS platform (launch availability permitting) since the ~1960s, complete development of improved super critical carbon dioxide (sCO2) turbomachinery applicable to advanced nuclear power generation, and demonstrate alternative RPS isotopes for power solutions in low-power ISR instrumentation suites for spaceflight assets that leverage a diversified and robust domestic inventory of radioisotope fuels independent of foreign supply chains. In FY 2025, OECI will continue developing advanced nuclear technology in viable devices and methods ensuring and stabilizing DOD's nuclear technologies, fuels, and material supply chains such as isotopic inventories and nuclear fuel production methods. Ongoing investments are focusing on energy conversion methods that better utilize the thermal energy generated by nuclear fuels (i.e., sCO2 turbine-alternators, Stirling engines, and betavoltaics), nuclear power system optimization (i.e., fuels, shielding, materials), and regulatory/infrastructure studies. In FY 2025, OECI will award disruptive nuclear technology innovations that will ensure continuity of safe operations for the warfighter in or around compromised nuclear facilities (i.e., Ukraine) by investing in rapid response capabilities, early detection methods, and nuclear proliferation countermeasures. Additionally, novel and resilient nuclear solutions to power demands for spaceflight platforms providing critical ISR capabilities for contested ground operations will be supported by OECI nuclear investments along with innovations allowing consideration of mobile nuclear systems for ground, sea, and air applications.			
FY 2024 to FY 2025 Increase/Decrease Statement: Programmatic increase is required for Operational Energy innovations to keep pace with adversarial developments, and to innovate at competitive levels enabling realistic adoption of nuclear technologies on realistic timelines. OECI's increase to support rapid spaceflight demonstrations of Stirling energy conversion systems are critical for surpassing China's aggressive investments in improved energy generation capabilities in space. With additional funds OECI will focus innovations to reduce size, volume, and risk of all nuclear systems (e.g., radioisotope or fission) in operational scenarios. This investment could be paramount for overmatch in the battlefield of the near-future in space, terrestrial, and maritime domains. Adversarial investments in nuclear technologies are evident by multiple, recent, successful, and fielded adversarial demonstrations. OECI is poised to lead DOD			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0604055D8Z / *Operational Energy Capability Improvement (OECI)*	**Project (Number/Name)** 458 / *Nuclear*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
in nuclear technology innovations, but significant programmatic increase is needed to ensure meaningful change in competitive timeframes. Nuclear innovations are expensive, but the comparative energy potential that can be realized from these investments is unrivaled by any energy source and should be considered a time-sensitive, and critical matter for the battlefield of tomorrow.			
Accomplishments/Planned Programs Subtotals	24.340	0.000	29.938

	FY 2023	FY 2024
Congressional Add: TRISO ***FY 2023 Accomplishments:*** The TRISO congressional add in addition to the $13 million baseline successfully established and optimized the first and only US commercial TRISO fabrication line which is foundational to the demonstration of the first advanced reactor funded by DOD - Pele.	10.000	-
Congressional Add: Distributed Maritime Energy Research ***FY 2023 Accomplishments:*** FY 2023 congressional add contract action awarded in September 2023. ***FY 2024 Plans:*** The project will begin executing in FY 2024 to deliver continuous power in maritime environments.	2.000	0.000
Congressional Adds Subtotals	12.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E ACD &P*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	397.789	39.855	76.764	63.162	-	63.162	55.700	48.229	47.263	48.151	Continuing	Continuing
162: *Nuclear and Conventional Physical Security*	333.949	30.569	28.686	26.217	-	26.217	25.829	24.247	24.643	25.107	Continuing	Continuing
040: *National Technical Nuclear Forensics Systems*	63.840	9.286	39.154	29.238	-	29.238	24.004	19.951	18.511	18.858	Continuing	Continuing
058: *Innovative Technologies*	0.000	0.000	6.034	4.794	-	4.794	2.857	0.929	0.925	0.942	Continuing	Continuing
064: *Nuclear Survivability*	0.000	0.000	2.890	2.913	-	2.913	3.010	3.102	3.184	3.244	Continuing	Continuing

Note

New Start (Y/N): N

A. Mission Description and Budget Item Justification

This Program Element supports the 2022 National Defense Strategy's four top-level defense priorities by: Defending the homeland, paced to the growing multi-domain threat posed by the People's Republic of China (PRC); Deterring strategic attacks against the United States, Allies, and partners; Deterring aggression, while being prepared to prevail in conflict when necessary – prioritizing the PRC challenge in the Indo-Pacific region, then the Russia challenge in Europe, and; Building a resilient Joint Force and defense ecosystem.

Nuclear and Conventional Physical Security/Nuclear Forensics, Resilience, and Survivability addresses the need to defend and deter against weapons of mass destruction threats and to safeguard personnel, prevent unauthorized access to equipment, installations, material, and documents, and to safeguard the foregoing against espionage, sabotage, damage, and theft. This program oversees advanced engineering development and rapid fielding throughout the Department of Defense (DoD) for an integrated and systemic approach to develop material solutions. Public Law, Presidential, and DoD guidance, and Combatant Command and Service requirements drive the priorities for these programs.

The Physical Security Enterprise and Analysis Group (PSEAG) is responsible for avoiding duplication of effort, ensuring systems integration, and promoting interoperability and sustainability. The material solutions either (a) lead to a Program of Record, (b) become technology insertions into existing programs; or (c) advance to being a certified Commercial/Government off-the-shelf product.

Per National Security Presidential Memorandum 35, the DoD leads the U.S. Government (USG) post-detonation National Technical Nuclear Forensics (NTNF) capability. Per DoD Directive S-2060.04, the Office of the Undersecretary of Defense for Acquisition & Sustainment (OUSD(A&S)) is the office responsible for developing and leading the DoD's NTNF capabilities. The DoD mission to collect and analyze post-detonation nuclear debris is critical to ensuring the USG can identify the source of nuclear material and holding those responsible for an attack is critical to our national defense and security. Internal and independent assessments indicate that new capabilities are needed to sustain an effective deterrent against an unattributed nuclear attack and meet the challenges of future threats. This PE is the only

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603161D8Z *I Nuclear and Conventional Physical Security Equipment RDT&E ACD &P*

DoD research, development, and test and evaluation (RDT&E) program focused on Advanced Component Development and Prototypes for post-detonation NTNF capabilities. Without fully supporting these requirements, the DoD's ability to meet this critical deterrence need will be significantly degraded.

The DoD, through the Innovative Technologies program, will partner with the National Nuclear Security Administration (NNSA) to develop technology aimed at preventing would-be proliferants from advancing nuclear weapons related efforts. Additionally, the DoD seeks to support current and future counter-proliferant missions by leveraging the expertise within the national laboratories. The program goal is to ensure DoD's operational units are paired with the NNSA technology experts to develop requirements early in the process to reduce the time of fielding a technology.

Nuclear Survivability will invest in innovative radiation hardening techniques to modernize microelectronics for strategic and space systems and increase the reliability of mission critical systems. This program will result in achieving key metrics, including improved understanding of radiation effects on advanced Complementary Metal Oxide Semiconductor (CMOS) technologies; Radiation Hardened/Strategic Radiation Hardened parts qualified and available for space and strategic modernization; Improved mission critical systems reporting; and improved testing procedure guidance for extreme radiation environments.

This PE can fund travel to support the requirements of this program.

This appropriation will finance work, including staffing, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct RDT&E efforts.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	40.706	76.764	67.160	-	67.160
Current President's Budget	39.855	76.764	63.162	-	63.162
Total Adjustments	-0.851	0.000	-3.998	-	-3.998
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.851	-			
• Program Adjustment	-	-	-3.998	-	-3.998

Change Summary Explanation

FY 2024 to FY 2025 decrease is associated with internal reprogramming from Advanced Component Development & Prototypes (0603161D8Z) to System Development and Demonstration (0604161D8Z) in support of Project 042: National Technical Nuclear Forensics / System Development & Demonstration (SDD).

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	Project (Number/Name) 162 / *Nuclear and Conventional Physical Security*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
162: *Nuclear and Conventional Physical Security*	333.949	30.569	28.686	26.217	-	26.217	25.829	24.247	24.643	25.107	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Physical Security Enterprise and Analysis Group (PSEAG) pursues the development of nuclear and conventional physical security materiel solutions in response to the stated needs and requirements of the Combatant Commands and Military Services. This program leverages commonalities in physical security requirements in order to closely balance and integrate the needs of users. The PSEAG is responsible for avoiding duplication of effort, ensuring systems integration, and promoting interoperability and sustainability. The materiel solutions either (a) lead to a Program of Record, (b) become technology insertions into existing programs; or (c) advance to being a certified Commercial/Government off-the-shelf product.

This PE can fund travel to support the requirements of this program.

This appropriation will finance work, including staffing, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct research, development, and test and evaluation efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Physical Security System Development & Demonstration Advanced Component Development & Prototypes	30.569	28.686	26.217
Description: Develop physical security components and systems to support valid requirements while eliminating duplication of effort, pursuing the use of government and commercial off-the-shelf products, ensuring systems integration, and promoting interoperability and sustainability. ***FY 2024 Plans:*** - Detect an adversary and assess their intentions by identifying and warning of unauthorized access to a specified area or installation, as well as equipment related to the notification and identification of explosive threats or hazards. - Control access to safeguard personnel and their families and to prevent unauthorized access to critical infrastructure and materials to validate and verify individuals entering or already within, a facility. - Invest in robust installation and transport security to prevent a weapon of mass destruction attack or the unauthorized access to key assets such as nuclear weapons and special nuclear material. - Improve the physical security profile of fixed sites and facilities, as well as critical items while in-transit.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	**Project (Number/Name)** 162 / *Nuclear and Conventional Physical Security*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Deter an adversary from accessing weapons of mass destruction or gaining unauthorized access to critical assets are at the heart of prevention. - Implement control measures that ensure access is limited to authorized persons is the foundation of physical security to delay or stop unauthorized entry/access to a specified/localized area. - Incorporate decision support systems to help management, operations, and planners make decisions, which may be rapidly changing and not easily specified in advance with a focus on command and control equipment, creation and enhancement of common operating pictures, and the establishment of common architectures / interface standards. ***FY 2025 Plans:*** - Detect, track, identify, and defeat uncrewed underwater vehicles where attribution and deterrence is considered. - Leverage Artificial Intelligence and Machine Learning to reduce nuisance and false alarm rates, detect insider threats, and/or improve detection and assessment of physical security threats. - Detect explosives at distances sufficient to protect people and resources at entry control points or other high value assets. - Develop insider threat detection systems to address the increased risk from internal adversaries. - Invest in exterior facing detection and wide area surveillance systems to address threats beyond restricted area perimeters to have sufficient time for response. - Identify innovative delay/denial solutions beyond high cost infrastructure upgrades to invest in lethal and non-lethal technology. - Improve network intrusion detection on physical security system networks to detect and prevent unauthorized access to a physical security systems or networks. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 funding decrease represents program adjustments to align with higher priority National Defense Strategy requirements.			
Accomplishments/Planned Programs Subtotals	30.569	28.686	26.217

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	Project (Number/Name) 162 / *Nuclear and Conventional Physical Security*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Physical Security - Closed Out Efforts	Various	Various : Various	269.549	-		-		-		-		-	-	-	-
Physical Security Enterprise & Analysis Program	Various	Multiple Performers : Multiple Locations	2.651	30.569		28.686		26.217		-		26.217	Continuing	Continuing	-
Automated Installation Entry Multiple Authentication Fast Lanes	MIPR	Various : Various	2.027	-		-		-		-		-	-	-	-
Deep Learning Real Time Adaptive Learning Monitoring of Sound Velocity Profile	MIPR	Various : Various	1.530	-		-		-		-		-	-	-	-
Development, Test and Evaluation of an Electronic Security Systems Information Management System	MIPR	Various : Various	1.444	-		-		-		-		-	-	-	-
Electronic Harbor Security System–Sensor Track Fusion	MIPR	NIWC, Pacific : NIWC, Pacific	0.854	-		-		-		-		-	-	-	-
Enterprise Ready Tactical Assault Kit	MIPR	Various : Various	2.307	-		-		-		-		-	-	-	-
Improved UUV Detection and Tracking Using the AN/WQX-2 Sonar	MIPR	Various : Various	1.950	-		-		-		-		-	-	-	-
Next Generation Electronic Security System	MIPR	Various : Various	1.200	-		-		-		-		-	-	-	-
Self Homing and Event Triggered / Assessment DroneAerial PS Assessment	MIPR	Various : Various	1.275	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	Project (Number/Name) 162 / *Nuclear and Conventional Physical Security*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Wide Area Surveillance & Detection System with Radar	MIPR	Various : Various	1.386	-		-		-		-		-	-	-	-
Sonar Navigated Autonomous Grabber	MIPR	Various : Various	1.446	-		-		-		-		-	-	-	-
Automated Neural Classification of Seismic and Acoustic Sensors	MIPR	Various : Various	1.237	-		-		-		-		-	-	-	-
		Subtotal	288.856	30.569		28.686		26.217		-		26.217	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Completed Efforts	Various	Various Performers : Various Locations	21.555	-		-		-		-		-	-	-	-
PSEAG Interoperability	MIPR	TBD : TBD	0.455	-		-		-		-		-	-	-	-
		Subtotal	22.010	-		-		-		-		-	-	-	N/A

Remarks

NA

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Completed Efforts	Various	Multiple Performers : Multiple Locations	15.127	-		-		-		-		-	-	-	-
Test & Evaluation of Maritime Application Environment Radar	MIPR	NIWC, Atlantic : NIWC, Atlantic	0.650	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	**Project (Number/Name)** 162 / *Nuclear and Conventional Physical Security*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	15.777	-		-		-		-		-	-	-	N/A

Remarks

NA

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years - Completed Efforts	Various	Multiple Performers : Multiple Locations	7.306	-		-		-		-		-	-	-	-
		Subtotal	7.306	-		-		-		-		-	-	-	N/A

Remarks

NA

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	333.949	30.569		28.686		26.217		-		26.217	Continuing	Continuing	N/A

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	**Project (Number/Name)** 162 / *Nuclear and Conventional Physical Security*

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	**Project (Number/Name)** 162 / *Nuclear and Conventional Physical Security*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Nuclear and conventional physical security R&D				
Nuclear and Conventional Physical Security	1	2023	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	Project (Number/Name) 040 / *National Technical Nuclear Forensics Systems*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
040: *National Technical Nuclear Forensics Systems*	63.840	9.286	39.154	29.238	-	29.238	24.004	19.951	18.511	18.858	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Per NSPM 35, the DoD leads the USG post-detonation NTNF capability. Per DoDD S-2060.04, OUSD(A&S) is the DoD office responsible for DoD's NTNF capabilities. This program is the only DoD RDT&E program focused on Advanced Component Development & Prototypes for NTNF capabilities.

Collecting and analyzing post-detonation debris is critical to ensure the USG can identify the source of nuclear material and holding those involved or supporting an attack accountable is critical to our national defense and security. Swift and accurate forensic and attribution (identification) capabilities are vital to supporting the President and Secretary of Defense in developing an appropriate, and timely, national response to a nuclear event and to prevent future attacks. An effective NTNF capability ensures potential adversaries, or those who support them, know that they will be held accountable if they use proxies or other non-traditional delivery (e.g., false-flag operations) of nuclear weapons against the U.S., U.S. interests, or allies. Both internal and independent studies indicate that continued improvement to the USG's NTNF capabilities is needed to sustain a credible deterrent against an attempted or actual nuclear attack.

Additionally, this program sustains perishable U.S. technical expertise at the operational DoD laboratories required to respond to a post-detonation NTNF event. The DoD's laboratory capability in this area is limited by capacity and technical expertise. Increased support of the DoD's NTNF mission is crucial to prevent attrition of current capabilities and knowledge base, ensure that this critical and unique deterrence capability is not lost, putting the security of the nation and the ability to deter specific kinds of nuclear attack at risk, and meeting a higher standard of timeliness and confidence as directed.

This PE can fund travel to support the requirements of this program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: NTNF Capability Development	9.286	39.154	29.238
Description: The development of capability to collect, analyze, and evaluate nuclear debris is critical to our national defense and security. Swift and accurate forensic analysis and contribution to USG attribution (identification) processes are vital to supporting the President and Secretary of Defense in developing an appropriate national response to a nuclear event and to prevent future attacks in a timely manner. Recent Russian nuclear threats related to Ukraine have sharpened the understanding of, and need for, robust nuclear forensics capabilities.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	**Project (Number/Name)** 040 / *National Technical Nuclear Forensics Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
NTNF investments support development and retention of technical nuclear forensics expertise, improve CONUS and OCONUS collection, improve the fixed laboratory process, improving legacy NTNF capabilities, and supporting operationalization of new capabilities. ***FY 2024 Plans:*** - Increase R&D towards achieving unmanned air collect capabilities leveraging the Harvester Particulate Airborne Collection System, and develop NextGen, Thresher, prototype design. - Funding to prepare for a National-Level Exercise currently planned for FY 2025. - Hiring additional contractors to work at the DoD operational laboratories, as well as, procuring needed equipment specific to post-detonation sample analysis. - Further develop and transition technologies to address prompt detection gaps, including the United States Prompt Diagnostics System and developing uncrewed aerial and ground collection. - Continue to advance DoD NTNF laboratory and collection capabilities to shorten timelines and improve confidence levels in reporting to national level decision makers. - Exercise component and collective collection and analysis to both assess readiness to inform improvements and demonstrate USG NTNF capability to contribute to strategic deterrence. ***FY 2025 Plans:*** - Support the collection, analysis, and evaluation of ground and airborne post-detonation debris samples. - Collection: Improve ground collection equipment to strengthen communications and improve CONUS mission timelines and the refurbishment of Harvester particulate collection pods for deployment on uncrewed platforms (e.g., MQ-9) to improve OCONUS mission timelines. - Analysis: Improve and exercise debris and prompt signals analysis capability at DoD laboratories to improve analysis and attribution timelines. - Evaluation: Expand the debris diagnostic and prompt evaluation capability to speed the attribution process. - Improve the Quality Assurance process for assuring that the surrogate samples used in NTNF exercises best match anticipated real-world NTNF ground and airborne samples. - Perform a scoping study on the necessary information technology infrastructure to easily facilitate the transfer of Restricted Data classified information between interagency partners. - Improve the information technology infrastructure to enhance interagency data transfer. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E ACD&P*	**Project (Number/Name)** 040 / *National Technical Nuclear Forensics Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 to FY 2025 decrease is associated with internal reprogramming from Advanced Component Development & Prototypes (0603161D8Z) to System Development and Demonstration (0604161D8Z).			
Accomplishments/Planned Programs Subtotals	9.286	39.154	29.238

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	Project (Number/Name) 040 / *National Technical Nuclear Forensics Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
National Nuclear Technical Forensics Product Development	Various	Multiple Performers : Multiple Locations	62.518	9.091		38.959		29.238		-		29.238	Continuing	Continuing	-
		Subtotal	62.518	9.091		38.959		29.238		-		29.238	Continuing	Continuing	N/A

Remarks

NA

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Nuclear Testing, Diagnostics, Forensics and Stockpile Stewardship Course	IA	DOE : Livermore, CA	1.322	0.195		0.195		-		-		-	Continuing	Continuing	-
		Subtotal	1.322	0.195		0.195		-		-		-	Continuing	Continuing	N/A

Remarks

NA

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	63.840	9.286		39.154		29.238		-		29.238	Continuing	Continuing	N/A

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E ACD&P*	**Project (Number/Name)** 040 / *National Technical Nuclear Forensics Systems*

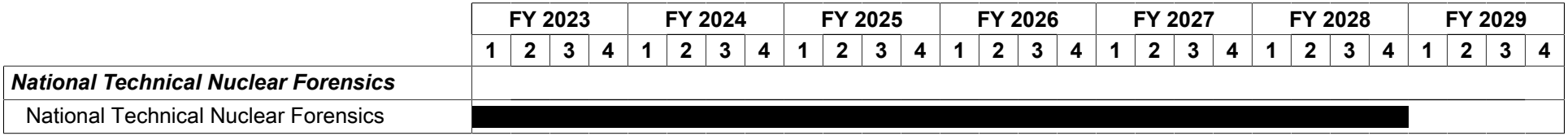

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E ACD&P*	**Project (Number/Name)** 040 / *National Technical Nuclear Forensics Systems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
National Technical Nuclear Forensics				
National Technical Nuclear Forensics	1	2023	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	Project (Number/Name) 058 / *Innovative Technologies*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
058: *Innovative Technologies*	0.000	0.000	6.034	4.794	-	4.794	2.857	0.929	0.925	0.942	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The Innovative Technologies program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

A. Mission Description and Budget Item Justification

The DoD, in partnership with the NNSA, provides technical capability to understand and defeat nuclear threat devices, including improvised nuclear devices, radiological dispersal devices, and lost or stolen foreign nuclear weapons, as well as to develop foundational technologies supporting nuclear counterproliferation efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Innovative Technologies	-	6.034	4.794
Description: The DoD, through the Innovative Technologies program, will partner with the NNSA to develop technology aimed at preventing would-be proliferants from advancing nuclear weapons related efforts. Additionally, the DoD seeks to support current and future counter-proliferant missions by leveraging the expertise within the national laboratories. The program goal is to ensure DoD's operational units are paired with the NNSA technology experts to develop requirements early in the process to reduce the time of fielding a technology. ***FY 2024 Plans:*** The Innovative Technologies program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. ***FY 2025 Plans:*** The Innovative Technologies program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 decrease is the result of planned internal program adjustments.			
Accomplishments/Planned Programs Subtotals	-	6.034	4.794

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	**Project (Number/Name)** 058 / *Innovative Technologies*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	Project (Number/Name) 058 / *Innovative Technologies*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Advance Innovative Technologies	C/TBD	TBD : TBD	-	-		6.034		4.794		-		4.794	Continuing	Continuing	-
		Subtotal	-	-		6.034		4.794		-		4.794	Continuing	Continuing	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		6.034		4.794		-		4.794	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E ACD&P*	**Project (Number/Name)** 058 / *Innovative Technologies*

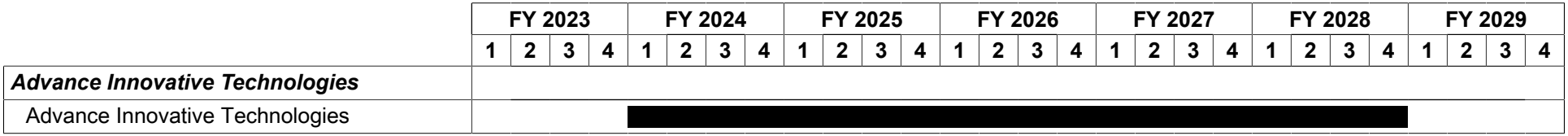

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	**Project (Number/Name)** 058 / *Innovative Technologies*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Advance Innovative Technologies				
Advance Innovative Technologies	1	2024	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	Project (Number/Name) 064 / *Nuclear Survivability*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
064: *Nuclear Survivability*	0.000	0.000	2.890	2.913	-	2.913	3.010	3.102	3.184	3.244	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Nuclear Survivability will invest in innovative radiation hardening techniques to modernize microelectronics for strategic and space systems and increase the reliability of mission critical systems. This program will result in achieving key metrics, including improved understanding of radiation effects on advanced CMOS technologies; Radiation Hardened/Strategic radiation hardened parts qualified and available for space and strategic modernization; Improved mission critical systems reporting; and improved testing procedure guidance for extreme radiation environments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Nuclear Survivability Research & Development	-	2.890	2.913

Description: Many DoD mission-critical systems must survive and operate through one or more nuclear weapons effects (NWE) environments. This requires assured DoD access to NEW-survivable components, materials, and the test and evaluation infrastructure to validate system performance.

This program will result in achieving key metrics, including improved understanding of radiation effects on advanced CMOS technologies; Radiation Hardened/Strategic radiation hardened parts qualified and available for space and strategic modernization; Improved mission critical systems reporting; and improved testing procedure guidance for extreme radiation environments.

FY 2024 Plans:
- Sponsor R&D to better understand the effects of extreme radiation environments on state-of-the-art microelectronics to support nuclear modernization and improve radiation hardening by design.
- Modernize the reporting infrastructure for the CBRN Mission Critical Reports in accordance with requirements from DoDI 3150.09.
- Sponsor sustainment of trusted sources of supply and critical production lines for strategic radiation hardened microelectronics.
- Increase access and reduce cost for technologies and materials that provide increased levels of survivability to the effects of nuclear weapons.

FY 2025 Plans:
- Sponsor R&D to better understand the effects of extreme radiation environments on state-of-the-art microelectronics to support nuclear modernization and improve radiation hardening by design.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E ACD&P*	**Project (Number/Name)** 064 / *Nuclear Survivability*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Sponsor R&D to improve radiation hardening techniques leveraging novel additive manufacturing technology. - Sponsor comparative study on electromagnetic pulse hardening techniques for critical infrastructure in support of Executive Order 13865 requirements. - Increase access and reduce cost for technologies and materials that provide increased levels of survivability to the effects of nuclear weapons. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 increase supports R&D to improve radiation hardening techniques and a comparative study on electromagnetic pulse hardening techniques.			
Accomplishments/Planned Programs Subtotals	-	2.890	2.913

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E A CD&P*	Project (Number/Name) 064 / *Nuclear Survivability*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Nuclear Survivability	TBD	TBD : TBD	-	-		2.890		2.913		-		2.913	Continuing	Continuing	-
		Subtotal	-	-		2.890		2.913		-		2.913	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		2.890		2.913		-		2.913	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E ACD&P*	**Project (Number/Name)** 064 / *Nuclear Survivability*

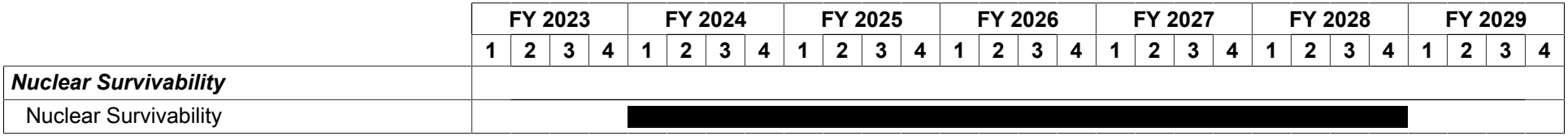

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603161D8Z / *Nuclear and Conventional Physical Security Equipment RDT&E ACD&P*	**Project (Number/Name)** 064 / *Nuclear Survivability*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Nuclear Survivability				
Nuclear Survivability	1	2024	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603600D8Z / *WALKOFF*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	222.280	144.824	143.486	149.704	-	149.704	152.996	143.831	147.918	152.155	Continuing	Continuing
600: *WALKOFF*	222.280	144.824	143.486	149.704	-	149.704	152.996	143.831	147.918	152.155	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression, Defend the Homeland, and Build Sustainable and Long-Term Advantage.

The program is Classified.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	133.795	143.486	138.816	-	138.816
Current President's Budget	144.824	143.486	149.704	-	149.704
Total Adjustments	11.029	0.000	10.888	-	10.888
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	17.000	-			
• SBIR/STTR Transfer	-3.077	-			
• Departmental Adjustment	-2.894	-	10.888	-	10.888

Change Summary Explanation

Classified program.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603600D8Z / *WALKOFF*	Project (Number/Name) 600 / *WALKOFF*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
600: *WALKOFF*	222.280	144.824	143.486	149.704	-	149.704	152.996	143.831	147.918	152.155	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Classified.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: WALKOFF	144.824	143.486	149.704
Description: Classified. ***FY 2024 Plans:*** Classified ***FY 2025 Plans:*** Classified ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Classified			
Accomplishments/Planned Programs Subtotals	144.824	143.486	149.704

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• 0603600D8Z O&M DW: *WALKOFF*	3.516	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Remarks

D. Acquisition Strategy

Classified.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603600D8Z / *WALKOFF*	**Project (Number/Name)** 600 / *WALKOFF*

Remarks

Classified.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603600D8Z / *WALKOFF*	**Project (Number/Name)** 600 / *WALKOFF*

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Classified																												
Classified	[redacted]																											

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603600D8Z / *WALKOFF*	**Project (Number/Name)** 600 / *WALKOFF*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Classified				
Classified	1	2023	4	2029

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	718.515	120.029	117.196	136.513	-	136.513	161.427	170.647	173.261	176.743	-	-
514: *Environmental Security Technology Certification Program*	718.515	120.029	117.196	136.513	-	136.513	161.427	170.647	173.261	176.743	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiative for Building Sustainable and Long-Term Advantage.

The Environmental Security Technology Certification Program (ESTCP) demonstrates and validates promising and innovative environmental, resilience, and energy technologies that target the most urgent needs of the Department of Defense (DoD). Technologies selected are projected to provide a return on the investment through cost savings and improved efficiencies. The program responds to: (1) Congressional concern over the slow pace of remediation of environmentally polluted sites on military installations, (2) Congressional direction to conduct demonstrations specifically focused on emerging new technologies, and (3) the need to improve defense readiness by reducing the drain on the Department's operation and maintenance dollars caused by environmental restoration, waste management, and the cost of energy. Preference for demonstrations is given to technologies that have successfully completed all necessary research and development objectives, and address the highest priority DoD requirements.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	122.638	117.196	147.654	-	147.654
Current President's Budget	120.029	117.196	136.513	-	136.513
Total Adjustments	-2.609	0.000	-11.141	-	-11.141
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.609	-			
• Program Adjustment	-	-	-11.141	-	-11.141

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 514: *Environmental Security Technology Certification Program*		
Congressional Add: *PFAS remediation and disposal technology*	5.000	-
Congressional Add: *AFFF replacement, disposal, and cleanup technology*	15.000	-
Congressional Add: *PFAS on-site remediation technologies*	15.000	-
Congressional Add: *On-base Microgrid Resiliency*	-	5.000
Congressional Add Subtotals for Project: 514	35.000	5.000
Congressional Add Totals for all Projects	35.000	5.000

Change Summary Explanation

FY 2025 increase from FY 2024 to support climate related grid vulnerability and on-base power.

FY 2025 decrease from previous President's Budget to support higher Departmental priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*	Project (Number/Name) 514 / *Environmental Security Technology Certification Program*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
514: *Environmental Security Technology Certification Program*	718.515	120.029	117.196	136.513	-	136.513	161.427	170.647	173.261	176.743	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Environmental Security Technology Certification Program (ESTCP) demonstrates and validates promising and innovative environmental and energy technologies that target the DoD's most urgent needs. Technologies selected are projected to provide a return on the investment through cost savings and improved efficiencies. The program responds to: (1) Congressional concern over the slow pace of remediation of environmentally polluted sites on military installations, (2) Congressional direction to conduct demonstrations specifically focused on emerging new technologies, and (3) the need to improve defense readiness by reducing the drain on the Department's operation and maintenance dollars caused by environmental restoration, waste management, and the cost of energy. Preference for demonstrations is given to technologies that have successfully completed all necessary research and development objectives, and address the highest priority the DoD requirements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Environmental Technology Demonstration/Validation	31.957	31.631	30.481

Description: Funds are programmed for investments in projects that address priority DoD environmental requirements. The focus of the program is on (1) addressing emerging and recalcitrant cleanup issues, including per- and polyfluoroalkyl substances (PFAS), (2) live-site unexploded ordnance (UXO) in the underwater environment, (3) conservation and range sustainment technologies, and (4) reducing life cycle costs of the DoD weapons systems by eliminating hazardous materials. These investments directly assist the DoD with compliance with a number of regulatory requirements including the Resource Conservation & Recovery Act (RCRA), the National Environmental Policy Act (NEPA), the Clean Water Act, the Clean Air Act, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Sikes Act, the Endangered Species Act, NEPA, the National Historic Protection Act, the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, and the Protection of Historic Properties 36 CFR Part 800, among others.

FY 2024 Plans:
(1) Demonstration of PFAS destruction technologies for investigation-derived wastes, groundwater, and soils/solids. (2) Transition to live site testing of UXO detection, classification and localization systems. (3) Demonstrate technologies to improve efficiencies of natural and cultural resources compliance requirements. (4) Demonstrate and validate pollution prevention technologies for weapons systems and platforms including, chromium-free corrosion control coatings for aviation platforms and ship decks, reduced solvent topcoats with improved functional performance and solvent-free ultrasonic paint removal, lead-free and chromium

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*	**Project (Number/Name)** 514 / *Environmental Security Technology Certification Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
free ignitors for explosives and PFAS-free materials including firefighting formulations to further address the intent of Sec 3232 of the 2020 NDAA. ***FY 2025 Plans:*** (1) Continue demonstration and validation of PFAS destruction technologies for investigation-derived wastes, groundwater, and soils/solids; (2) transition underwater UXO mobility prediction tools to live site conditions to assess the ability of the tools to predict UXO location changes as a result of high water currents due to hurricanes and other conditions; (3) Demonstrate advancing technology, including eDNA for rapid survey of invasive species or at-risk species to improve environmental security and reduce compliance burdens; (4) Demonstrate and/or validate pollution prevention technologies for weapons systems and platforms including sustainable PFAS-free corrosion control methods for additive manufacturing, sustainable manufacturing for large caliber gun tubes (DFARS Case 2020-D031), validate depainting alternative technologies and transition to depot use, continue to demonstrate sustainable processing methods for energetics and sustainable energetic formulations, including processing of explosives and isocyanate and lead-free propellants, and demonstrate more sustainable PFAS-free firefighting formulations (Sec 323 of 2020 NDAA). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 increase ($3.2 million) are to expand demonstration of PFAS alternatives in weapons systems and platforms, including explosives; demonstrate and validate promising PFAS-free firefighting foams, PFAS cleanup, and PFAS destruction technologies that have transitioned from SERDP; adjust for increased at-sea operational costs for UXO Live site testing of munitions remediation systems; accelerate transition of new conservation, compliance and wildland fire technologies to end-users through the National Innovation Landscape Network, which focuses in key DoD geographies, including Alaska, Southern California, Sonoran Desert, Pacific Islands, and the Southeast U.S..			
Title: Energy Technology Demonstration/Validation ***Description:*** Funds are programmed for investments in energy and water projects that constitute the Installation Energy Test Bed Initiative. This initiative increases energy and water resilience, improves facility energy efficiency, reduces installation energy intensity, increases the use of renewable energy, and improves energy security. Emerging energy technologies offer the DoD a cost-effective opportunity to meet these requirements on its installations while reducing energy and operational costs. The test bed program exploits the Department's existing built infrastructure to evaluate energy efficiency and renewable energy technologies under the varied climatic conditions and building types the DoD manages. ***FY 2024 Plans:*** Planned multi-year demonstrations will continue for microgrid and energy storage technologies that improve installation energy system reliability and resilience and reduce the time and cost of microgrid design and development. High efficiency building heating, ventilation, and air conditioning (HVAC) technologies demonstrations will continue to establish utility cost and air quality	35.572	40.770	55.733

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*	**Project (Number/Name)** 514 / *Environmental Security Technology Certification Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
improvement performance data. Planned multi-year demonstrations will continue for water efficiency and resilience technologies and analysis. Technology transition efforts through targeted partnerships with energy services companies (ESCOs) and utilities will continue. These demonstrations address requirements for installation energy resilience stated in DoD Instruction 4170.11, and energy and water efficiency goals stated in Executive Order 14057. ***FY 2025 Plans:*** Demonstrations of innovative technologies and technology transition approaches will continue to improve installation energy and water resilience, improve building system efficiency and reduce facilities' utility and operational costs in accordance with DoD Instruction 4170.11 and Executive Order 14057. Studies will be initiated to evaluate microgrid operations and sustainment requirements to ensure microgrids perform as intended throughout the system life-cycle. Demonstrations will be initiated for integrated solutions that combine facility energy demand reduction, advanced district energy systems, energy storage and load flexibility to improve building-level and system-wide efficiency and reliability. Integrated solutions provide benefit through cumulative improvements in facility and equipment efficiency that reduce whole-system life cycle costs. Solutions will vary by regional factors and projects will be selected to validate system design approaches that are tailorable to the Departments installation portfolio. The program will seek to facility teaming with key stakeholders to leverage expertise in system design and analysis, systems integration, project development and utility services. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 growth ($17.3 million) will initiate new demonstrations of integrated system design solutions for whole-building retrofits that result in greater reduction in life cycle costs over current practices. Solutions will integrate building energy efficiency technologies, energy storage, and control systems that enable greater load flexibility and improved energy system reliability and resilience. Demonstrations will be conducted in different regions to evaluate system designs under various regional climate/weather conditions.			
Title: Sustainable Technologies Evaluation and Demonstration Program	2.936	3.000	3.000
Description: The focus of the STED Program is to validate the performance of technologies and products against current mission requirements while creating awareness of their capability to cost effectively support operational readiness, resilience, and security. These technologies are widely implemented and consumed by the Department and Federal agencies. Accomplishments/plans are described for each fiscal year below. Funds are programmed for investments to identify, evaluate, and demonstrate domestic technologies that enhance the Departments mission in operational environment, while cost-effectively sustaining DoD priorities. ***FY 2024 Plans:*** Continued evaluation, demonstration, and transition of multiple sustainable technologies in DoD operation. Examples include the recently qualified biobased dust suppressants, biobased corrosion inhibitors/rust removers, biobased rifle bore cleaner, biobased cleaner lubricant and preservative (CLP) for small arms. Initial demonstrations show improved operational performance, reduced			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*	**Project (Number/Name)** 514 / *Environmental Security Technology Certification Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
maintenance times, reduction in waste, environmental and health impacts. Demonstrate technologies that address high priority issues and validate performance by the warfighter in operational environments. ***FY 2025 Plans:*** Increase demonstrations of technologies and products, such as biobased products using U.S. domestic agricultural materials that are cost effective, improve readiness, and supply chain security. Demonstrate emerging products and technologies, including biobased, energy efficient, recycled content, and less hazardous materials at DoD installations and Federal agency facilities to increase transition across the Federal Government. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change in FY 2025.			
Title: Installation Climate Resilience Technology Demonstration/Validation ***Description:*** Funds are programmed for investments in projects that address priority resilience needs of Department of Defense installations for the construction of resilient infrastructure, sustainment of ecosystem services critical to installations, and regionalize technology transfer to address climate extremes and natural hazard impacts on installation resilience in support of DoD's statutory requirements, including 10 USC 2285, 2391, 2802, 2815, 2864, and 42 USC 8253. ***FY 2024 Plans:*** Planned multi-year demonstrations will continue for projects that focus on the impact of climate change on DoD infrastructure and DoD water supply, the analysis of the impacts of weather extremes on the DoD installations, and improvements to climate resilience of systems linking DoD installation and surrounding community infrastructure. Initiate focused investment on end-user define tools technologies in regional of high concentrations of DoD installations that are experiencing rapid ecological transformations, sea level rise or climate change. ***FY 2025 Plans:*** Planned multi-year demonstrations will continue for projects for addressing the permafrost thawing on installations in Alaska, invasive species invasion in Hawaii, and wildfire risk in the arid Southwest. Continue investment of climate change on DoD buildings in coastal zones, climate impacts on the DoD water supply, and analysis of the impacts of weather extremes on the DoD installations. Accelerate technology transfer through the formal network of climate resilience testbeds called "Innovation Landscapes" will be established within key DoD geographies experiencing rapid change from weather extremes, natural hazards, and changing development. Areas with high concentrations of DoD installations including Alaska, Southern California, Sonoran Desert, Pacific Islands, Coastal California, mid-Atlantic, Gulf Coast, and the Southeast US possess unique challenges from compounded natural hazards and weather extremes on mission activities. Projects will build robust, accelerated technology transfer on installations within this network to sustain mission activities and meet environmental compliance in the face of compounded threats (i.e., hurricane and coastal development around installations, or permafrost and wildfire). These testbeds	14.564	36.795	47.299

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*	**Project (Number/Name)** 514 / *Environmental Security Technology Certification Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
will develop resilience and adaptation metrics to improve climate readiness, and will address complex resilience and adaptation problems, such as linkages between corrosion of weapons systems and platforms with coastal construction and vegetation management. Demonstrate greenhouse gas assessment methodologies for both built infrastructure (military construction materials, construction, and lifecycles) and natural areas net sequestration. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 increase ($11.8 million) will expand new sites within a national network of climate resilience testbeds called “Innovation Landscapes” within key DoD geographies experiencing rapid change from weather extremes, invasive species, natural hazards, human development, and corrosion of weapons systems and platforms.			
Accomplishments/Planned Programs Subtotals	85.029	112.196	136.513

	FY 2023	FY 2024
Congressional Add: PFAS remediation and disposal technology ***FY 2023 Accomplishments:*** Initiated the demonstration and validation of multiple destruction technologies for PFAS in groundwater and soils/solids. In addition, several technologies were initiated that focus on remediation of PFAS in impacted matrices. These technologies will be demonstrated at multiple DoD installations throughout the United States.	5.000	-
Congressional Add: AFFF replacement, disposal, and cleanup technology ***FY 2023 Accomplishments:*** Demonstrated and validated five commercial PFAS-free firefighting formulations in large scale testing that met the revised military specification for land-based fuel fires, but take 1.5-2 times longer to extinguish fires relative to AFFF, and published the final report on this technology demonstration. Published new PFAS-free foam specification, MIL-PRF-32725, to enable qualification and purchase of PFAS-free foams by 1 Oct 2023 requirement. Demonstrated and validated compressed air foams as superior to aspirated foams from typical firefighting equipment. Developed and demonstrated cleaning solutions to more effectively remove AFFF PFAS from aircraft rescue and firefighting (ARFF) trucks.	15.000	-
Congressional Add: PFAS on-site remediation technologies ***FY 2023 Accomplishments:*** Initiated the demonstration and validation of multiple technologies for on-site remediation of PFAS in groundwater and soils/solids. These technologies will be tested at Schriever Space Force Base, Colorado and other DoD installations.	15.000	-
Congressional Add: On-base Microgrid Resiliency	-	5.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*	**Project (Number/Name)** 514 / *Environmental Security Technology Certification Program*

	FY 2023	FY 2024
FY 2024 Plans: Expand on past projects to demonstrate and analyze the costs and benefits of long duration energy storage integrated with microgrids to meet energy system reliability requirements per DoD policy DODI 4170.11.		
Congressional Adds Subtotals	35.000	5.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The ESTCP solicits proposals from all of the DoD organizations, other Federal Agencies, and the commercial sector. Projects are selected based on an annual competitive process through reviews by multi-agency panels.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*	Project (Number/Name) 514 / *Environmental Security Technology Certification Program*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/IDDQ	Noblis : Reston, VA	31.551	4.000	Sep 2022	4.000		4.000		-		4.000	-	-	32.000
		Subtotal	31.551	4.000		4.000		4.000		-		4.000	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Installation Energy and Water	C/Various	Various : Various	280.133	33.686		43.530		51.671		-		51.671	-	-	-
Environmental Restoration	C/Various	Various : Various	157.432	41.681		9.052		11.848		-		11.848	-	-	-
Munitions Response	C/Various	Various : Various	72.014	4.454		4.865		5.889		-		5.889	-	-	-
Resource Conservation and Resilience	C/Various	Various : Various	61.810	6.267		7.468		6.761		-		6.761	-	-	-
Weapons Systems and Platforms	C/Various	Various : Various	107.575	13.085		8.486		7.868		-		7.868	-	-	-
Installation Climate Resilience	C/Various	Various : Various	0.000	13.920		36.795		45.476		-		45.476	-	-	-
Sustainable Technologies Evaluation and Demonstration Program	C/Various	Various : Various	8.000	2.936		3.000		3.000		-		3.000	-	-	-
		Subtotal	686.964	116.029		113.196		132.513		-		132.513	-	-	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	718.515	120.029		117.196		136.513		-		136.513	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*	**Project (Number/Name)** 514 / *Environmental Security Technology Certification Program*

ID	Task Name	Start	Finish
1	FY 2022 In-Progress Reviews	9/1/2023	11/30/2023
2	Develop FY 2023 Program	1/1/2023	9/30/2023
3	FY 2023 In-Progress Reviews	2/1/2024	11/30/2024
4	Develop FY 2024 Program	1/1/2024	9/30/2024

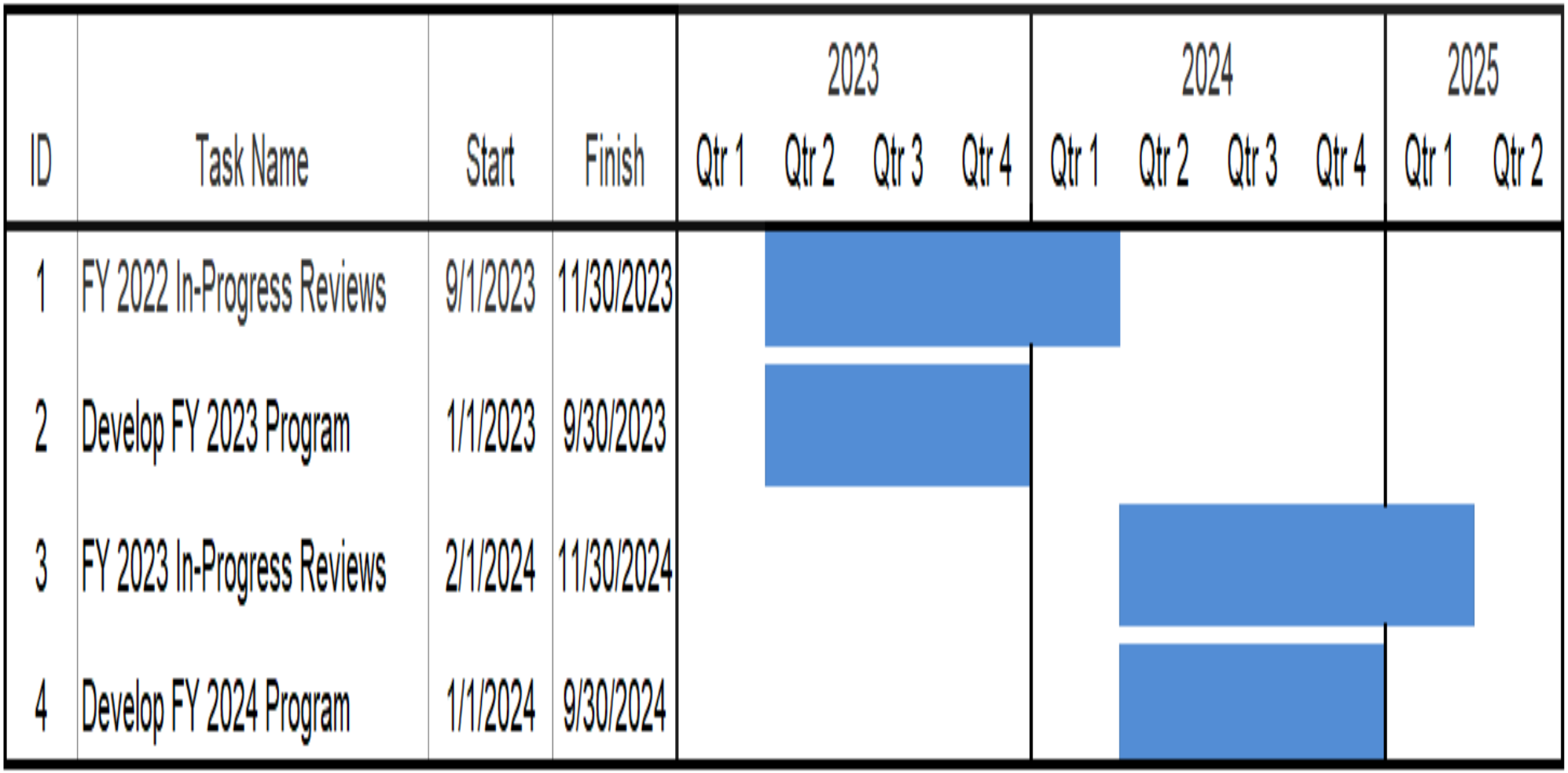


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*	**Project (Number/Name)** 514 / *Environmental Security Technology Certification Program*

ID	Task Name	Start	Finish
1	FY 2023 In-Progress Reviews	9/1/2024	11/30/2024
2	Develop FY 2024 Program	1/1/2024	9/30/2024
3	FY 2024 In-Progress Reviews	2/1/2025	11/30/2025
4	Develop FY 2025 Program	1/1/2025	9/30/2025

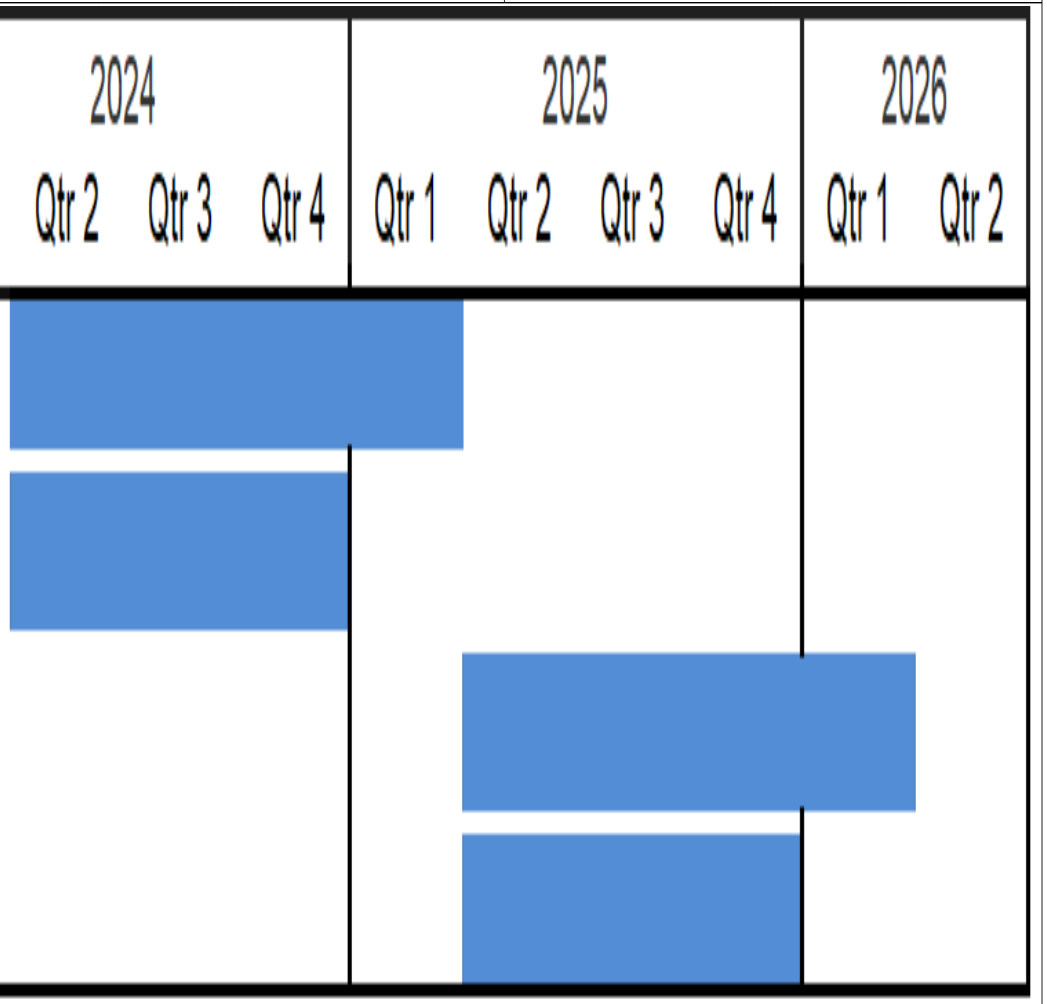


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603851D8Z / *Environmental Security Technology Certification Program (ESTCP)*	**Project (Number/Name)** 514 / *Environmental Security Technology Certification Program*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
In Progress Reviews				
FY 2023 In Progress Reviews	2	2024	1	2025
FY 2024 In Progress Reviews	2	2025	1	2026
Develop Program				
Develop FY 2024 Program	2	2024	4	2025
Develop FY 2025 Program	2	2025	4	2026

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603923D8Z / *Coalition Warfare Program (CWP)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	107.263	10.932	12.103	9.890	0.000	9.890	9.636	9.765	9.923	10.109	-	-
923: *Coalition Warfare*	107.263	10.932	12.103	9.890	-	9.890	9.636	9.765	9.923	10.109	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression, Defend the Homeland, and Build Sustainable and Long-Term Advantage.

The Coalition Warfare Program (CWP) supports the DoD organizations that: 1) work with foreign partners to collaboratively address strategic technology gaps for current and future missions; 2) develop interoperability solutions for coalition operations; and 3) develop and strengthen defense relationships. It comprehensively supports the 2022 National Security and Defense Strategies direction to engage allies and partners, implementing guidance to "fully engage all countries and institutions to cooperate on shared threats" and "redouble our efforts to deepen our cooperation with like-minded partners." The CWP provides a broad base of technological, operational, and logistical support for military operations and eases the U.S. financial and manpower burdens associated with meeting military goals and objectives. Coalitions and relationships with international partners are high priorities for the nation and the DoD.

The CWP supplements U.S. Government proponents' funding for cooperative efforts, ensuring U.S. funds are sufficient to complete research and development activities with foreign partners. When CWP funds are used to help fund a cooperative project, that project leverages technical and financial contributions of the foreign partners and accelerates the development and delivery of technical solutions to the warfighter. For every $1 the CWP has invested in cooperative projects with 81 partners since 2001, the program has leveraged $3 in foreign partner resources and $2 in other U.S. Government resources. The CWP funding enables the DoD project teams to transition technology to operational use, further development, or integration into other systems. These projects may also form the basis for future cooperation with international partners.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603923D8Z *I Coalition Warfare Program (CWP)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	11.154	12.103	10.430	-	10.430
Current President's Budget	10.932	12.103	9.890	-	9.890
Total Adjustments	-0.222	0.000	-0.540	-	-0.540
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.222	-			
• SBIR/STTR Transfer	-	-			
• Other program adjustments	-	-	-0.540	-	-0.540

Change Summary Explanation

The FY 2025 decrease of $0.540 million is to support other DoD administration and departmental priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603923D8Z / *Coalition Warfare Program (CWP)*	Project (Number/Name) 923 / *Coalition Warfare*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
923: *Coalition Warfare*	107.263	10.932	12.103	9.890	-	9.890	9.636	9.765	9.923	10.109	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Coalition Warfare Program (CWP) supports the DoD organizations that: 1) work with foreign partners to collaboratively address strategic technology gaps for current and future missions; 2) develop interoperability solutions for coalition operations; and 3) develop and strengthen defense relationships. It comprehensively supports the 2022 National Security and Defense Strategies direction to engage allies and partners, implementing guidance to "fully engage all countries and institutions to cooperate on shared threats" and "redouble our efforts to deepen our cooperation with like-minded partners." The CWP provides a broad base of technological, operational, and logistical support for military operations and eases the U.S. financial and manpower burdens associated with meeting military goals and objectives. Coalitions and relationships with international partners are high priorities for the nation and the DoD.

The CWP supplements U.S. Government proponents' funding for cooperative efforts, ensuring U.S. funds are sufficient to complete research and development activities with foreign partners. When CWP funds are used to help fund a cooperative project, that project leverages technical and financial contributions of the foreign partners and accelerates the development and delivery of technical solutions to the warfighter. For every $1 the CWP has invested in cooperative projects with 81 partners since 2001, the program has leveraged $3 in foreign partner resources and $2 in other U.S. Government resources. The CWP funding enables the DoD project teams to transition technology to operational use, further development, or integration into other systems. These projects may also form the basis for future cooperation with international partners.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Coalition Warfare Program (Continuing Projects)	10.932	12.103	9.890
Description: The CWP provides funding on a competitive basis to DoD organizations to conduct cooperative research, development, test, and evaluation projects with foreign partners. The goals of the CWP program are to: collaboratively address strategic technology gaps for current and future missions, develop interoperability solutions for coalition operations, and strengthen current and future defense partnerships. The CWP selects projects for funding through an annual competitive selection process in accordance with Department of Defense and Combatant Command needs. In addition to funding newly selected projects, the program also provides funding to projects that began in earlier selection cycles (for a total of up to three years of funding for each project). Currently, the funded portfolio includes 59 active projects governed by negotiated/signed international agreements with 21 foreign partners.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603923D8Z / *Coalition Warfare Program (CWP)*	**Project (Number/Name)** 923 / *Coalition Warfare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
CWP funding is used to incrementally fund executing projects selected in previous nomination cycles that are bound by government-to-government international agreements. CWP projects that are currently executing using incremental pre- fiscal year 2023 funding will: • Develop and validate a new class of multirole 5000 series aluminum-magnesium alloys for improved welded strength, ballistics, and marine corrosion resistance to replace current alloy 5083 used in ground, amphibious, and sea systems (AL MGS ALLOYS) (US Army) • Over the Horizon Radar Accuracy (DETAILS CLASSIFIED) • Develop and assess a low light level, digital fused goggle with augmented reality for enhanced Soldier mobility and lethality (DELTA-I) (US Army) • Develop, test, and demonstrate terrestrial laser communications network system to provide uninterrupted, anti-jam, real-time data/video links and ISR operations. (LASERCOMMNET) (US Army) • Build, fly, and demonstrate microsatellites with onboard AIS and imagery-based ship detection fused to provide Maritime Domain Awareness (MICROSAT MDA) (US Navy) • Establish the capability for space solar cell calibration to enable accurate calculation on orbit power for all spacecraft, military and commercial (SOLARCELLCAL) (US Air Force) • Develop dynamic Resource Allocation Management (RAM) applications and decision aids to allow both coalition warfighters to operate efficiently in the electromagnetic spectrum (EMW RAM) (US Navy) • Develop Long Wavelength Infrared (LWIR)/Very Long Wavelength Infrared (VLWIR) camera for standoff detection of buried Improvised Explosive Devices (IED) (IED CAM) (US Navy) • Develop a standards-based Mission Partner Gateway eXtended (MPGW-X) solution to improve the exchange of command-and-control information during contingency operations (MPGW-X) (OSD) • Develop shared, automated infrasonic detection and localization software for persistent surveillance (MSAIW) (US Army) • Develop and demonstrate a gas-generator (solid propellant) fueled rotating detonation engine through static firing tests under relevant flight conditions for high-speed operation and demonstrate performance characteristics that will translate into a tactical missile propulsion system with 2-5 times longer range (SPEAR) (US Navy) • Create a distributed contextually aware, heterogeneous collaborative Counter Unmanned Aerial System (CUAS) capability against multi-agent UAS threats (CHCUAS) (US Army) • Develop a shared, persistent, affordable, and accessible distributed simulation test bed capability, with a repository of released data and models for reuse, connected to FVEY nation defense labs to facilitate rapid prototype testing and experimentation to address warfighter challenges (VIPRE) (US Army) • Develop a fieldable prototype man portable system that is immune to detection (WARWS) (US Navy) • Flight-test multiple guidance, navigation, and control technologies to validate sensor apertures and design tools in representative flight conditions. (HSMAC) (US Air Force)			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603923D8Z / *Coalition Warfare Program (CWP)*	**Project (Number/Name)** 923 / *Coalition Warfare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Develop a manufacturing process with a novel high temperature alloy that fabricates small/medium scale turbine engine components for high-speed propulsion (MANTAS) (US Air Force) • Confirm the transition performance (boost to ramjet operation burn, “B2B”) of a liquid-fueled integral rocket ramjet in full-scale ground experimentation. (THRESHER B2B) (US Air Force) FY 2023 funding will be used to incrementally fund executing projects selected in previous nomination cycles that are bound by government-to-government international agreements. CWP projects that are currently executing and receiving incremental funding that includes FY 2023 funds will: • Develop and test launch, recovery, teaming of Hybrid Vertical Take-Off and Landing Unmanned Aerial Systems (VTUAS) with autonomous sea and ground vehicles (VTUAS) (US Navy) • Advance understanding of near sunset ionospheric structures to improve predictions for space environment disturbance effects that impact operational radio telecommunications, surveillance systems, and GPS signals propagation (SPORT) (US Army) • Achieve range increase for next-generation air-breathing munition for long-range precision fires on the order of 3 to 6 times from existing gun weapon systems (ABLRM-D) (US Navy) • Research, develop, manufacture, and test a low cost, low weight (less than three grams) chemical detection payload for a Black Hornet 3, micro–Unmanned Aerial System (UAS)(MCS) (US Army) • Design, develop, and produce air launched UAS and carriage/launch systems to address IAF and USAF needs for extended range communication (ALUAS) (US Air Force) • Develop and demonstrate low-cost non-cooperative space-based maritime surveillance technologies (LLAMDA) (US Navy) • Integrate low power sensors into stealth underwater power sources (BEACONS LPS) (US Navy) • Develop a lightweight transparent armor (LWTA) to defeat 7.62X39 threats using NRL’s revolutionary energy guiding layer concept (LWTA) (US Navy) • Develop fieldable prototype sensors to identify and defeat threats to friendly coalition snipers (BINO NIRO) (US Navy) • Research, develop, prototype, and test wide area decontamination solutions on various terrain (ports of debarkation and embarkation, main supply routes, and forward staging areas) (CBWAD) (US Army) • Develop collective cyber defense data exchange standards and deliver a prototype cyber defense message center providing NATO partners selective access to prepositioned cyber information (SCIA) (US Air Force) • Develop, test and field AI algorithms to enhance sonar operator performance by improving situational awareness, increasing decision-making bandwidth, and reducing decision making time (AI FOR USW) (US Navy) • Develop a capability to provide beyond line-of-sight wide area volume surveillance, target track and cueing over large forward areas from a sanctuary-based HF OTH radar to support microwave fire-control radars on forward stationed blue platforms hiding in contested environments, enhancing platform survivability (BIFOCAL) (US Navy) • Develop multi-modal autonomous navigation solutions for unmanned surface vessels operating in GNSS-denied environments (NEXUS) (US Navy)			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603923D8Z / *Coalition Warfare Program (CWP)*	**Project (Number/Name)** 923 / *Coalition Warfare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Develop and mature expendable countermeasure (CM) concepts to defend against surrogate imaging seeker threats and laser protected devices during contested Air Operations (THOR'S HAMMER) (US Air Force) • Develop a UUV Tanker to conduct distributed EW and UUV recharging functions in austere environments (UUV TANKER) (US Navy) • Establish a CWP project nomination with a strategic partner to develop and identify cyber attack vectors and data flow anomalies between the electric power grid and long-haul telephony networks for the purpose of building resiliency against cascading failures (ROCI-EC Collaboration Initiative) (INDOPACOM) ***FY 2024 Plans:*** FY 2024 funding will be used to incrementally fund executing projects selected in previous nomination cycles that are bound by government-to-government international agreements. CWP projects that are currently executing and receiving incremental funding that includes FY 2024 funds will: • Develop and test launch, recovery, teaming of Hybrid Vertical Take-Off and Landing Unmanned Aerial Systems (VTUAS) with autonomous sea and ground vehicles (VTUAS) (US Navy) • Achieve range increase for next-generation air-breathing munition for long-range precision fires on the order of 3 to 6 times from existing gun weapon systems (ABLRM-D) (US Navy) • Develop and test prototype space environment sensors and tools for common Space Situational Awareness picture enabling a neighborhood watch capability for space attack assessment (COMMON SSA) (US Air Force) • Characterize the region-specific threat of severe acute respiratory infections (SARI) and initiate clinical testing of a Middle East Respiratory Syndrome (MERS) Coronavirus (CoV) vaccine candidate (SARI) (US Army) • Develop an open standards architecture to enable "plug-n-play" insertion of assistive Artificial Intelligence (AI) agents into coalition Intelligence, Surveillance, Reconnaissance (ISR) Processing, Exploitation and Dissemination (PED) systems and build a new generation of AI enabled smart sensors (CATE) (US Army) • Mature interoperable information and command and control decision support systems for threat awareness, understanding, and response in a multinational coalition computational environment (ITAC) (US Army) • Integrate low power sensors into stealth underwater power sources (BEACONS LPS) (US Navy) • Develop a lightweight transparent armor (LWTA) to defeat 7.62X39 threats using NRL's revolutionary energy guiding layer concept (LWTA) (US Navy) • Develop fieldable prototype sensors to identify and defeat threats to friendly coalition snipers (BINO NIRO) (US Navy) • Research, develop, prototype, and test wide area decontamination solutions on various terrain (ports of debarkation and embarkation, main supply routes, and forward staging areas) (CBWAD) (US Army) • Deliver a COMPACT solid-state scalable Gigawatt HPM "Cannon', exploiting state-of-the art US Blumlein technology, Sandia Lab's VCSEL lasers, and Singapore high-power miniature switches, capable of neutralizing electronic devices with broad threat capabilities (COMPACT HPM) (US Air Force)			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603923D8Z / *Coalition Warfare Program (CWP)*	**Project (Number/Name)** 923 / *Coalition Warfare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Develop new classes of acoustic processing algorithms that allow for increased detection, discrimination and tracking of strategic competitor submarine contacts in high clutter environments, yielding increased target indication for the operator (ROBUST ASW) (US Navy) • Develop collective cyber defense data exchange standards and deliver a prototype cyber defense message center providing NATO partners selective access to prepositioned cyber information (SCIA) (US Air Force) • Develop, test and field AI algorithms to enhance sonar operator performance by improving situational awareness, increasing decision-making bandwidth, and reducing decision making time (AI FOR USW) (US Navy) • Develop a capability to provide beyond line-of-sight wide area volume surveillance, target track and cueing over large forward areas from a sanctuary-based HF OTH radar to support microwave fire-control radars on forward stationed blue platforms hiding in contested environments, enhancing platform survivability (BIFOCAL) (US Navy) • Develop and refine neurocognitive optimization training tools for improving Soldiers' physical and psychological resiliency to combat operational stress (BPOC IPCFEx) (US Army) • Develop a Fire and Forget (F&F) Counter FIAC swarm modeling and analysis (M&A) capability to support follow-on war gaming and at sea experimentations activities (COUNTER FIAC) (US Navy) • Develop, test, improve, and evaluate prototype cyber defensive technologies (e.g., Intrusion Detection/Prevention Systems, or IDPSs) for protecting ground vehicle systems from cyber threats (CYBER GEMINI) (US Army) • Integrate live, virtual and constructive (LVC) environments across Joint and Coalition warfighter training continuums in order to maximize pilot training and readiness (ELITE) (US Air Force) • Develop an airborne optical communications model terminal and interface documentation to connect distributed coalition forces through the aerial layer with secure, interoperable information transport (IOT) (US Navy) • Assure Positioning, Navigation, and Timing (PNT) availability in Global Positioning System (GPS)-challenged and denied marine environments (MARINE PNT W/O GPS) (US Navy) • Create software that will autonomously detect, characterize, identify causation, and recover from satellite faults (REFLEX) (US Navy) • Develop an autonomous sensor emplacement capability for persistent indoor surveillance (RISES) (US Army) • Develop and test structural steel prototypes that exhibit non-magnetic and self-damping characteristics and achieve high-yield and tensile strength for DoD structural applications (SELF-DAMPING STRUCTURES) (US Navy) • Develop and test novel antireflective surfaces for infrared detector materials for the purpose of significantly reducing detectable reflections by at least 25X in operational environments (ARSID) (US Navy) Interoperability and Collaboration Initiatives: Program provides funds in support of new or planned acquisition programs with the aim of 1) promoting coalition interoperability early in the requirements or technical development phases, 2) harmonizing common			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603923D8Z / *Coalition Warfare Program (CWP)*	**Project (Number/Name)** 923 / *Coalition Warfare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
goals between U.S. and foreign partners, 3) improving management of collaborative efforts. These funds support workshops, risk reduction efforts, standards development, architecture analysis, and information management initiatives. ***FY 2025 Plans:*** FY 2025 funding will be used to incrementally fund executing projects selected in previous nomination cycles that are bound by government-to-government international agreements. The CWP will select and incrementally fund 8-12 collaborative RDT&E projects during the CWP FY 2025 selection cycle that support the 2022 National Security and Defense Strategies; Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) technology priority areas of biotechnology, quantum science, future-G, advanced materials, trusted artificial intelligence & autonomy, integrated system of systems, microelectronics, space technology, renewable energy generation & storage, advanced computing & software, human-machine interfaces, directed energy, hypersonics, and integrated sensing & cyber; and coalition warfighter needs. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease due to reduction in technological, operational, and logistical support.			
Accomplishments/Planned Programs Subtotals	10.932	12.103	9.890

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Combatant Commands, Services, Defense Agencies, and the Office of the Secretary of Defense nominate candidate projects on an annual basis. CWP provides selected projects up to three years of funding. The Program selects projects that address DoD priorities and meet the needs and requirements specified by the Joint Staff and the Combatant Commanders. Projects have equitable contributions from international partners, strong potential for transition, Combatant Command endorsement, and contribute to allied interoperability and/or meet a warfighter need.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603923D8Z / *Coalition Warfare Program (CWP)*	**Project (Number/Name)** 923 / *Coalition Warfare*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Coalition Warfare Program Project Product Development Costs	Various	Various : Various	80.079	4.946		5.540	Sep 2024	4.433	Sep 2025	-		4.433	-	-	-
		Subtotal	80.079	4.946		5.540		4.433		-		4.433	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Coalition Warfare Program Project Test and Evaluation Costs	Various	Various : Various	15.107	4.947		5.540	Sep 2024	4.414	Sep 2025	-		4.414	-	-	-
		Subtotal	15.107	4.947		5.540		4.414		-		4.414	-	-	N/A

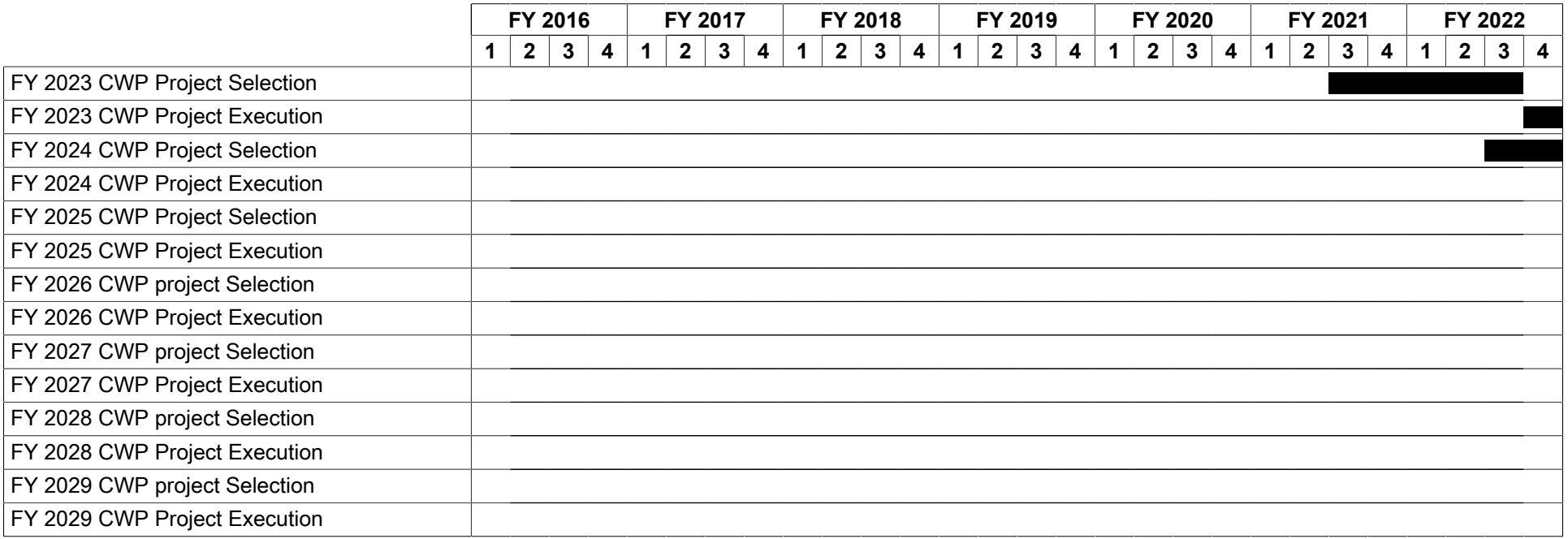
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Coalition Warfare Program Project Management Services Costs	Option/ FFP	Various : Various	12.077	1.039		1.023	Mar 2024	1.043	Mar 2025	-		1.043	-	-	-
		Subtotal	12.077	1.039		1.023		1.043		-		1.043	-	-	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	107.263	10.932		12.103		9.890		-		9.890	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603923D8Z / *Coalition Warfare Program (CWP)*	**Project (Number/Name)** 923 / *Coalition Warfare*



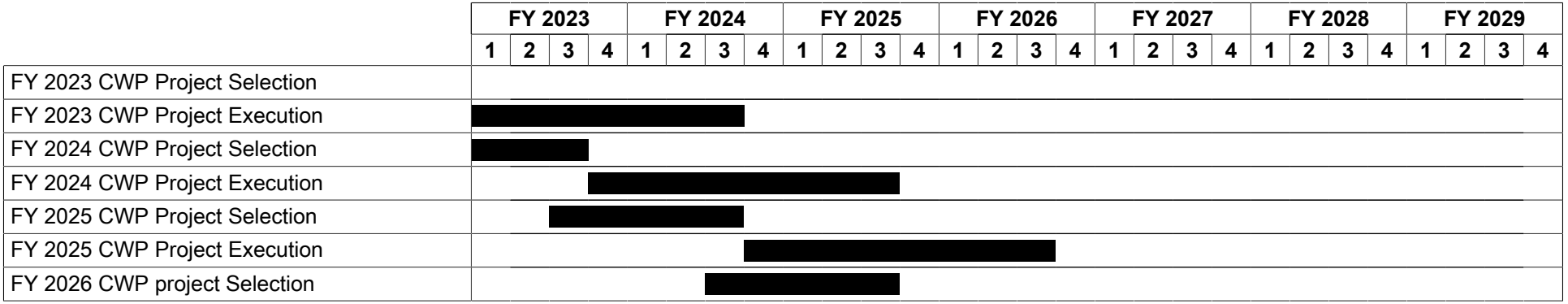


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603923D8Z / *Coalition Warfare Program (CWP)*	**Project (Number/Name)** 923 / *Coalition Warfare*

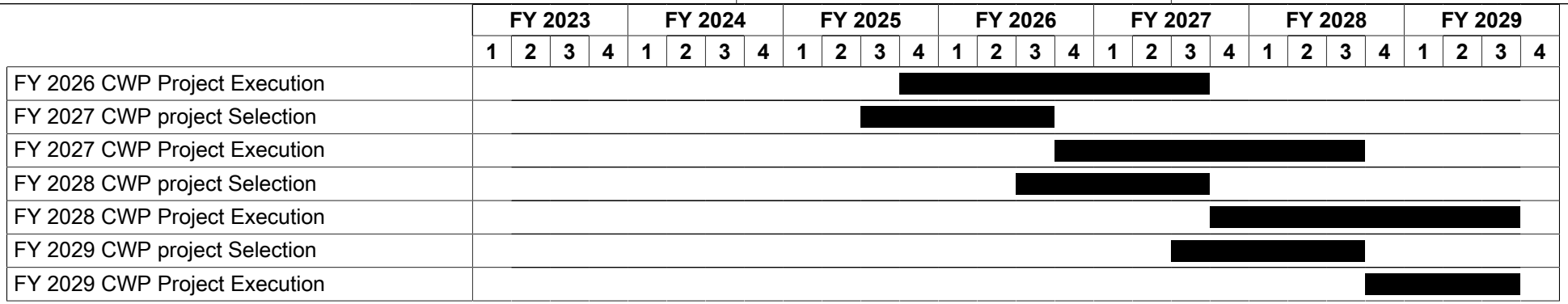


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603923D8Z / *Coalition Warfare Program (CWP)*	**Project (Number/Name)** 923 / *Coalition Warfare*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FY 2023 CWP Project Selection	3	2021	3	2022
FY 2023 CWP Project Execution	4	2022	3	2024
FY 2024 CWP Project Selection	3	2022	3	2023
FY 2024 CWP Project Execution	4	2023	3	2025
FY 2025 CWP Project Selection	3	2023	3	2024
FY 2025 CWP Project Execution	4	2024	3	2026
FY 2026 CWP project Selection	3	2024	3	2025
FY 2026 CWP Project Execution	4	2025	3	2027
FY 2027 CWP project Selection	3	2025	3	2026
FY 2027 CWP Project Execution	4	2026	3	2028
FY 2028 CWP project Selection	3	2026	3	2027
FY 2028 CWP Project Execution	4	2027	3	2029
FY 2029 CWP project Selection	3	2027	3	2028
FY 2029 CWP Project Execution	4	2028	3	2029

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	246.458	179.278	139.427	-	139.427	71.563	56.065	59.726	60.992	Continuing	Continuing
724: *Dual Use 5G Use Cases*	-	164.385	149.600	79.682	-	79.682	26.384	29.139	32.184	32.901	Continuing	Continuing
725: *Congested/Congested Spectrum*	-	76.223	23.423	53.355	-	53.355	37.058	18.162	18.541	18.911	Continuing	Continuing
726: *External Engagement*	-	0.200	6.255	6.390	-	6.390	8.121	8.764	9.001	9.180	Continuing	Continuing
729: *5G Cross Functional Team*	-	5.650	-	-	-	-	-	-	-	-	-	-

Note

New Start (Y/N): No

Funding realigned from Project 725 to Project 724 to support expanded efforts of Open Radio Access Network (Open RAN), distributed multi-input multi-output (MIMO), dynamic spectrum access (DSA), software-defined radio (SDR). Funding in the amount $10.266 million for 5G Cross Functional Team will be executed under Project 724 in FY 2024 in order to facilitate closeout of Project 729 resulting from CFT migration to CIO.

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland, Build Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

The Department of Defense (DoD) Next Generation (NextG) Information Communications Technologies (ICT) program will conduct large-scale experimentation and prototyping of dual-use (military and commercial) fifth-generation (5G) cellular network technology for military uses. The program will develop and deploy 5G networks at DoD sites to evaluate and enhance 5G systems and technologies for CONUS and OCONUS DoD missions. This will include both the direct use of commercially available capabilities and DoD-specific technology enhancements and applications that highly leverage commercial capabilities. The program will also develop, test, and evaluate technology solutions to identify and mitigate the security challenges that 5G and NextG technologies will present in order to enable the military to operate through untrusted networks.

The program will:

• Continue efforts to deploy flexible 5G infrastructure at eight U.S. military facilities to enable varied applications and networking prototypes,
• Complete evaluations at least twenty different DoD 5G applications at DoD facilities across the Services based on parallel commercial applications and technologies,
• Deliver high availability systems with security assurance across all DoD operational settings. The overall objective is to ensure DoD personnel and systems have access to mobile communications anywhere they operate.
• Leverage 5G technology and networks for military applications while ensuring secure connectivity and resiliency against adversarial activities."

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604011D8Z *I Next Generation Information Communications Technology (5G)*

The program will deliver fieldable prototype capabilities that will remain in place at designated DoD locations as well as lessons learned to promulgate 5G knowledge and tradecraft. This will ensure that both near-term and future generations of information and communications technologies will be capable of supporting US military and national security objectives.

The program will be executed through established support agreements with DoD Service laboratories and through existing DoD and Government-Wide Acquisition Contracts (GWACs), to include General Services Administration (GSA, contracts) that are suitable and cost-effective for 5G technology prototyping and telecommunications network equipment procurement and integration.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	248.466	179.278	159.467	-	159.467
Current President's Budget	246.458	179.278	139.427	-	139.427
Total Adjustments	-2.008	0.000	-20.040	-	-20.040
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.000	-			
• SBIR/STTR Transfer	-6.983	-			
• Program Adjustments	-0.025	-	-20.323	-	-20.323
• Economic Assumption	-	-	0.283	-	0.283

Change Summary Explanation

Decrease of $20.323 million in FY 2025 was a $12.524 million realignment to the DoD Chief Information Officer (CIO), PE 0604011D8Z, BA 7 project 171 (5G Cross Functional Team; reflects NDAA for FY 2023 directions for 5G transition, a $6.330 million realignment to PE 0603379D8Z Advanced Technical Integration and a $1.469 million reduction was applied to meet DoD overall funding reductions, which were spread to mitigate impact.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	Project (Number/Name) 724 / *Dual Use 5G Use Cases*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
724: *Dual Use 5G Use Cases*	-	164.385	149.600	79.682	-	79.682	26.384	29.139	32.184	32.901	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Develop and evaluate “dual-use” applications that demonstrate direct use of commercial systems and applications that use a large fraction of commercial capabilities that are augmented with DoD enhancements. Dual-use applications will be evaluated within a deployed 5G infrastructure with operationally relevant numbers of users and geographic scale.

These use cases include:

• Mission Planning/Training: Develop and evaluate ultra-high reliability, low latency, high bandwidth communications, as well as augmented and virtual reality (AV/VR) technologies that enable high fidelity mission planning and training in realistic environments over 5G networks.
• Depot Operations: Leverage 5G technologies to upgrade depots for “smart” operations including autonomous repair and maintenance activities as well as warehouse movement via driverless forklifts, pallets, and tactical trucks.
• Global Asset/Supply Chain Management: Leverage emerging 5G enterprise solutions to provide real time, optimum, continuous asset visibility and movement tracking, supply status, movement and resupply, and reduce inventory control costs.
• Smart Installations (e.g., logistics bases, ports): Develop and evaluate 5G enabled massive machine-to-machine communications, cloud and edge computing, and autonomy to enhance installation operations to maximize logistics traffic throughput.

Dual-use 5G research, development, and experimentation activities will deliver operational prototype capabilities that will remain in place at designated DoD locations. Those that do not perform sufficiently well will still provide lessons learned to promulgate 5G knowledge and tradecraft. These deliverables will inform base/camp/station modernization and recapitalization investments as prototypes transition to enduring infrastructure.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Dual Use 5G Use Cases	164.385	139.334	79.682
Description: Demonstrate use cases of both commercial and military value, while also assessing and developing mitigations to their security vulnerabilities.			
FY 2024 Plans: The DoD will conclude remaining Smart Warehouse prototyping and experimentation activities at sites. The program will continue technology transitions and transferring sites to services.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 724 / *Dual Use 5G Use Cases*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Dual-use prototyping and experimentation projects at Joint Base Pearl Harbor - Hickam, Naval Station Norfolk, Camp Pendleton, the National Training Center, and Joint Base San Antonio will continue. Localized full scale 5G mobile cellular networks will continue to support the dual-use military application experimentation at these DoD Service sites. The sites will continue experimentation with AR/VR for aircraft readiness, ship-wide and pier-side connectivity, rapidly deployable 5G for tactical command and control centers, and AR/VR for medical applications to include training. DoD will further development of Open RAN standards and technologies that accelerate the adoption of open interfaces, interoperable subsystems, and modular, multi-vendor solutions, as well as leverage new technology components (e.g., distributed MIMO, DSA, SDR) to create new ICT systems. ***FY 2025 Plans:*** The DoD will continue conclusion and transition of prototyping and experimentation activities at the remaining 5G experiment sites. The program will continue technology transitions and transferring sites to services through collaboration with DoD 5G CFT. These dual-use prototyping and experimentation projects include efforts at Joint Base Pearl Harbor - Hickam, Naval Station Norfolk, Nellis AFB, Camp Pendleton,and the Aberdeen Proving Ground.. Localized full scale 5G mobile cellular networks will continue to support the dual-use military application experimentation at these DoD Service sites. The sites will continue experimentation with AR/VR for aircraft readiness, ship-wide and pier-side connectivity, mobile 5G infrastructure, and rapidly deployable 5G for tactical command and control centers. DoD will further continue development of Open RAN standards and technologies that accelerate the adoption of open interfaces, interoperable subsystems, and modular, multi-vendor solutions, as well as leverage new technology components (e.g., distributed MIMO, DSA, SDR) to create new ICT systems. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $40.798 million between FY 2024 to FY 2025 reflects the conclusion of several experimental sites, the elimination of sites that were not meeting expectations, and transition of successful efforts. The effort at Joint Base San Antonio was not meeting expectations due to a lack of progress at the site and advances occurring elsewhere in industry. As a result, this effort was concluded. Other sites such as efforts on smart warehouses reached their planned successful conclusion. In several cases, the experiments resulted in successful project demonstration and the focus shifts to transition of these experiments to the services. The effort at Fort Cavazos concluded after a culminating exercise in October 2023 and will not continue until the Department identifies a transition partner. Due to a combination of funding availability and operational ship movements, the experiment at Norfolk was rescoped to reduce the onboard/pier-side efforts and focus primarily on the shore connectivity. The combination of experiments reaching their natural conclusions and evaluations of ongoing experiments reduced the overall number of continuing experimental sites and corresponding funds. A $6.330 million realignment to PE 0603379D8Z Advanced			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 724 / *Dual Use 5G Use Cases*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Technical Integration and a $.867 million reduction were applied to meet DoD overall funding reductions, which were spread to mitigate impact. The $12.524 million decrease from FY 2024 to FY 2025 reflects the realignment of the 5G CFT to DoD CIO.			
Title: 5G Cross Functional Team (CFT) Support ***Description:*** Provide coordination of joint warfighting concepts, research and development, policy and program integration, acquisition and transition, and secure operations of 5G in DoD. ***FY 2024 Plans:*** Provide coordination of joint warfighting concepts, research and development, policy and program integration, acquisition and transition, and secure operations of 5G in DoD. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $10.266 million from FY 2024 to FY 2025 reflects the realignment of the 5G CFT to DoD CIO starting in FY 2025.	-	10.266	-
Accomplishments/Planned Programs Subtotals	164.385	149.600	79.682

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	Project (Number/Name) 724 / *Dual Use 5G Use Cases*	

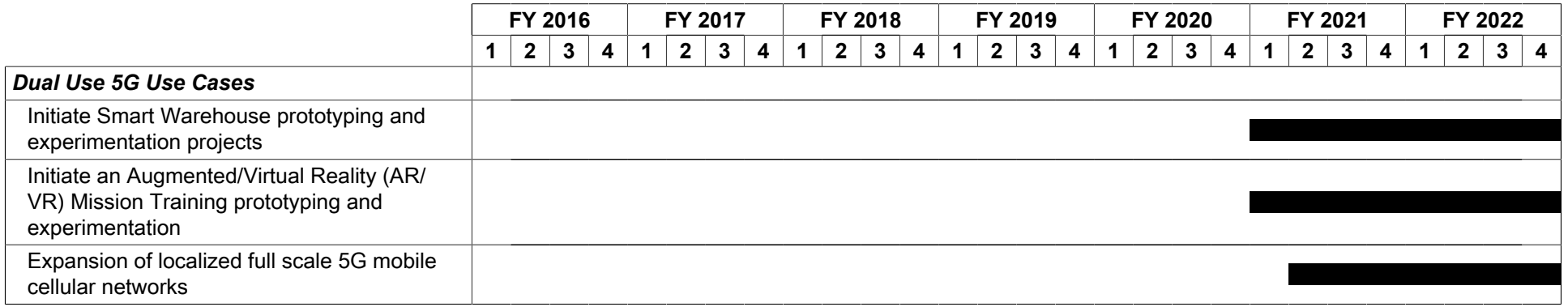
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Dual Use 5G Use Cases	MIPR	Army, Navy, Air Force, etc. : Various	203.323	164.385	Jun 2023	149.600	Jun 2024	79.682	Jun 2025	-		79.682	Continuing	Continuing	-
		Subtotal	203.323	164.385		149.600		79.682		-		79.682	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	203.323	164.385		149.600		79.682		-		79.682	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 724 / *Dual Use 5G Use Cases*



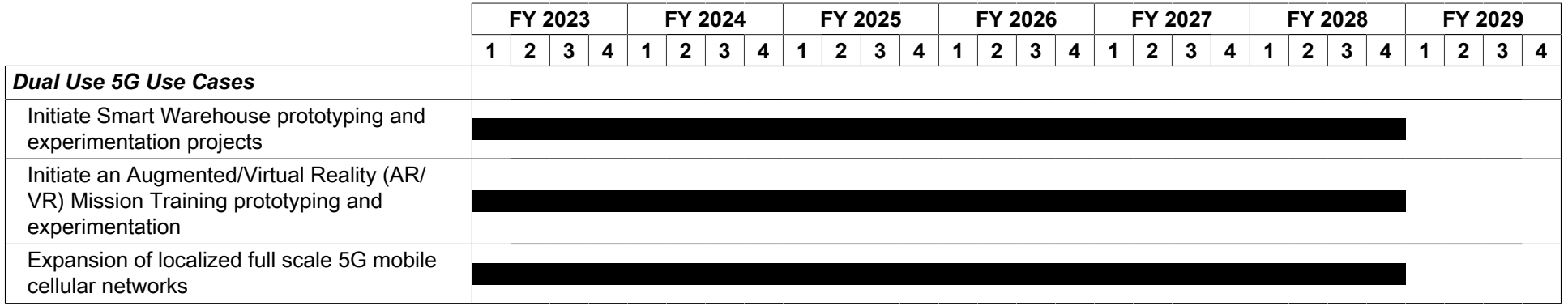


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 724 / *Dual Use 5G Use Cases*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Dual Use 5G Use Cases				
Initiate Smart Warehouse prototyping and experimentation projects	1	2021	4	2028
Initiate an Augmented/Virtual Reality (AR/VR) Mission Training prototyping and experimentation	1	2021	4	2028
Expansion of localized full scale 5G mobile cellular networks	2	2021	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	Project (Number/Name) 725 / *Congested/Congested Spectrum*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
725: *Congested/Congested Spectrum*	-	76.223	23.423	53.355	-	53.355	37.058	18.162	18.541	18.911	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Deliver high availability systems with security assurance across all DoD operational settings. The overall objective is to ensure DoD personnel and systems have access to mobile communications anywhere they operate. This includes the capability to “operate through” existing commercial 5G infrastructure, leveraging dynamic spectrum utilization and controlled manipulation of 5G network security architectures. These capabilities will be based on technologies such as dynamic spectrum utilization to maximize availability and resilience for wireless connectivity, multi-networking across wired and wireless systems for finding and exploiting alternate paths and redundant paths to ensure secure and reliable communication, network monitoring including new artificial intelligence (AI) techniques that use both passive and active measurements to assess security threats and identify potential mitigations. Develop tactical, operational, and strategic networking prototypes to demonstrate capabilities to dynamically balance use of congested spectrum between military systems and commercial wireless networks.

Capabilities will be prototyped and evaluated at-scale within highly dynamic and contested radio frequency (RF) environments. The Congested/Contested Spectrum research, development, and experimentation activities will deliver fieldable prototype capabilities that will remain in place at designated DoD locations. Those that do not perform sufficiently well will still provide lessons learned to promulgate 5G knowledge and tradecraft. These deliverables will inform base/camp/station modernization and recapitalization investments as prototypes transition to enduring infrastructure.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Congested/Contested Spectrum	76.223	23.423	53.355
Description: Demonstrate the capacity to “operate through” in congested/contested environments using dynamic spectrum utilization and by prototyping technologies to both defend and exploit 5G networks. ***FY 2024 Plans:*** Continue congested/contested spectrum prototyping and experimentation activities at Hill AFB. Continue the evaluation of the impact of the 5G network on the airborne radar systems and the radar’s impact on the 5G network to enable co-use or coexistence. Continue development of a network to disaggregate and mobilize command and control architectures at Nellis AFB, to include experimentation with 5G-enabled disaggregated command and control capabilities. ***FY 2025 Plans:*** Transition congested/contested spectrum prototyping and experimentation activities at Hill AFB to an Air Force site in Playas, New Mexico. The work at Hill AFB provided actionable data on sharing spectrum between military systems and commercial mobile			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 725 / *Congested/Congested Spectrum*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
network operators. With the completion of the testing at Hill AFB, the Playas site will provide a resource for continuation work to enable co-use or coexistence between military systems and commercial spectrum use. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $29.932 between FY 2024 and FY 2025 reflects the continued importance of support for expanded efforts of Open Radio Access Network (Open RAN), distributed multi-input multi-output (MIMO), dynamic spectrum access (DSA), software-defined radio (SDR). Open RAN is a critical technology for industry and Government but requires additional security and functionality. This work allows DOD to address key ORAN security challenges and also allows DOD to add critical functionality enabled by the Realtime Intelligent Controller (RIC). The RIC enables rapid innovation on 5G hardware similar to rapid development on commercial 5G handsets. The foundational work in Open RAN that has now been completed enables new security features and allows new DOD-relevant innovations via the RIC. This work captures two key industry driven aspects. First Open RAN provides an essential avenue for trusted suppliers and US industry as whole to regain influence in the critical area of 5G communications and to meet DoD secure communication requirements. Second, the growing industry demand for spectrum usage directly impinges upon DoD uses such as radars and secure command and control, anticipating and developing solutions to allow secure DoD operations to continue in an increasingly spectrum limited environment is being addressed by this work.			
Accomplishments/Planned Programs Subtotals	76.223	23.423	53.355

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	Project (Number/Name) 725 / *Congested/Congested Spectrum*	

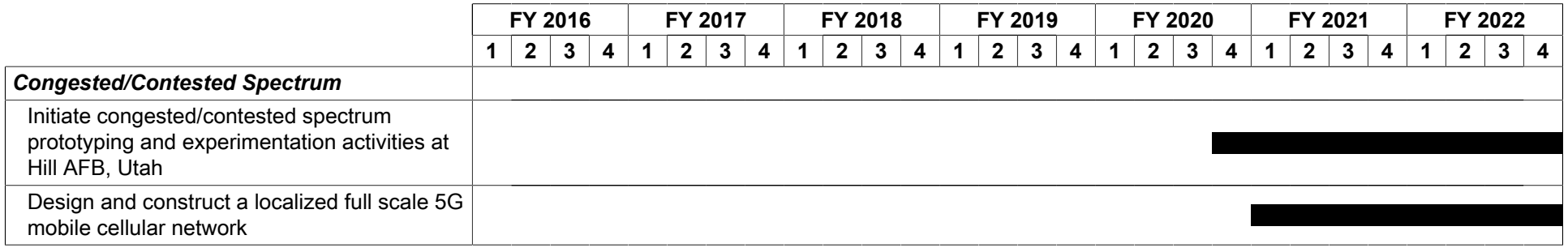
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Congested/Contested Spectrum	MIPR	Army, Navy, Air Force, Marine Corps, etc. : Various	122.791	76.223	Mar 2023	23.423	Mar 2024	53.355	Mar 2025	-		53.355	Continuing	Continuing	-
		Subtotal	122.791	76.223		23.423		53.355		-		53.355	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	122.791	76.223		23.423		53.355		-		53.355	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 725 / *Congested/Congested Spectrum*



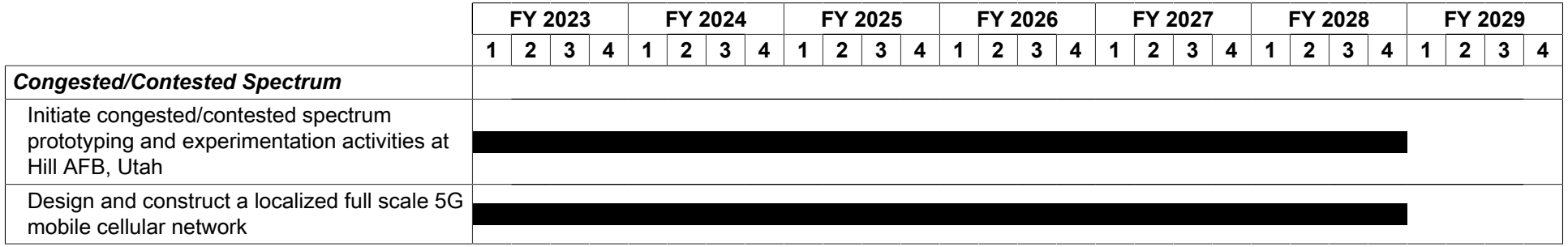


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 725 / *Congested/Congested Spectrum*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Congested/Contested Spectrum				
Initiate congested/contested spectrum prototyping and experimentation activities at Hill AFB, Utah	4	2020	4	2028
Design and construct a localized full scale 5G mobile cellular network	1	2021	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	Project (Number/Name) 726 / *External Engagement*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
726: *External Engagement*	-	0.200	6.255	6.390	-	6.390	8.121	8.764	9.001	9.180	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funding from this project will be used to externally engage across Government and beyond to influence statutes, policies, regulations, and standards within DoD, the U.S. Government, and international bodies for the global deployment and use of 5G to Next G technologies. DoD will conduct active and passive security vulnerability assessments of 5G prototypes in order to support zero-trust security designs for military 5G applications.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: External Engagement	0.200	6.255	6.390
Description: Develop policies, regulations, and standards for streamlined deployment of protected, resilient Government and commercial networks. Conduct active and passive security vulnerability assessments to support 5G security capabilities. ***FY 2024 Plans:*** Maintain efforts to inform and influence statutes, policies, regulations, and standards within DoD, the U.S. Government, and international bodies supporting a forward-thinking Next-G position. ***FY 2025 Plans:*** Maintain efforts to inform and influence statutes, policies, regulations, and standards within DoD, the U.S. Government, and international bodies supporting a forward-thinking Next-G position. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.135M between FY 2024 and FY 2025 reflects increased travel costs.			
Accomplishments/Planned Programs Subtotals	0.200	6.255	6.390

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	Project (Number/Name) 726 / *External Engagement*	

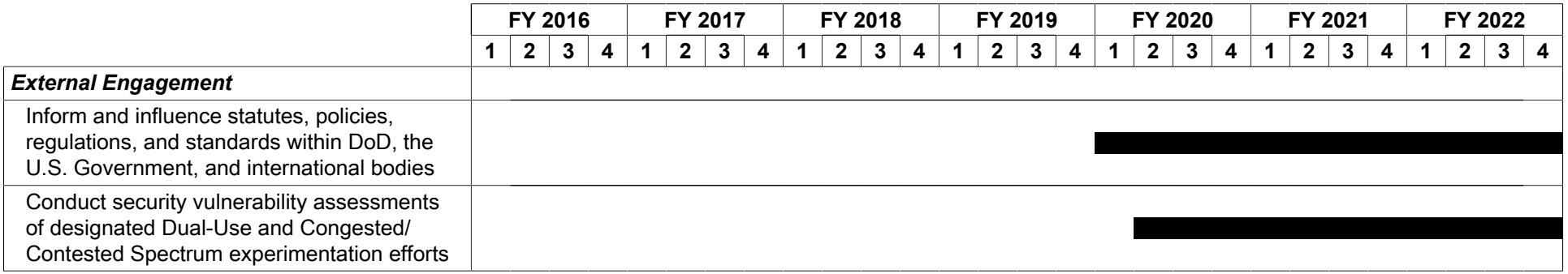
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
External Engagement	MIPR	Army, Navy, Air Force, Marine Corps, etc. : Various	0.100	0.200	Mar 2023	6.255	Mar 2024	6.390	Mar 2025	-		6.390	Continuing	Continuing	-
		Subtotal	0.100	0.200		6.255		6.390		-		6.390	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.100	0.200		6.255		6.390		-		6.390	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 726 / *External Engagement*



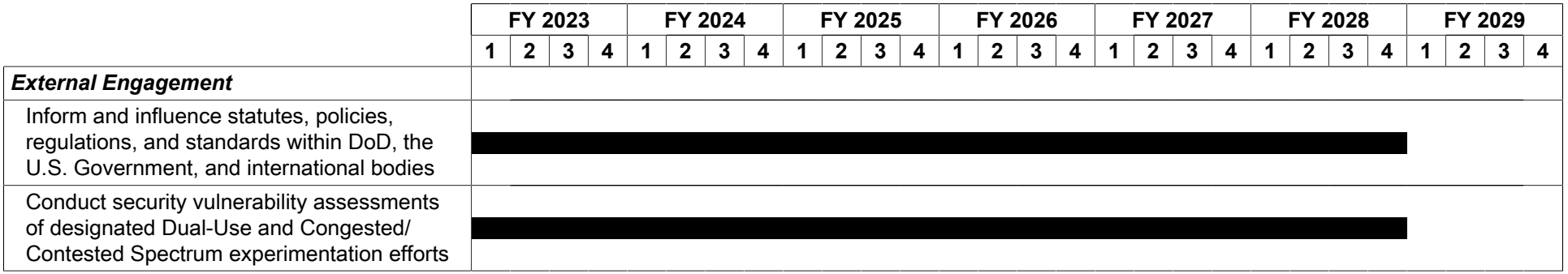


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 726 / *External Engagement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
External Engagement				
Inform and influence statutes, policies, regulations, and standards within DoD, the U.S. Government, and international bodies	1	2020	4	2028
Conduct security vulnerability assessments of designated Dual-Use and Congested/ Contested Spectrum experimentation efforts	2	2020	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	Project (Number/Name) 729 / *5G Cross Functional Team*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
729: *5G Cross Functional Team*	-	5.650	-	-	-	-	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The 5G Cross Functional Team will provide coordination of joint warfighting concepts, research and development, policy and program integration, acquisition and transition, and secure operations of 5G in DoD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: 5G Cross Functional Team (CFT) Support	5.650	-	-
Accomplishments/Planned Programs Subtotals	5.650	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	Project (Number/Name) 729 / *5G Cross Functional Team*	

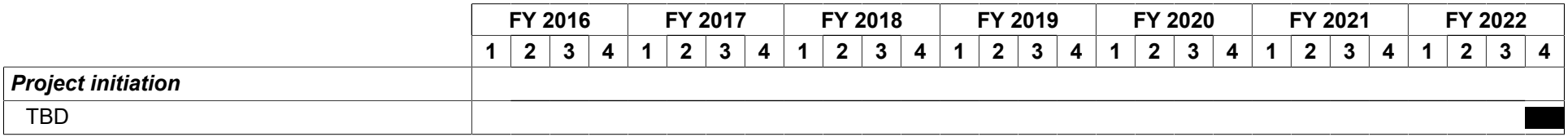
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
5G Cross Functional Team (CFT) Support	MIPR	TBD : TBD	1.500	5.650	Mar 2023	-		-		-		-	Continuing	Continuing	-
		Subtotal	1.500	5.650		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.500	5.650		-		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 729 / *5G Cross Functional Team*



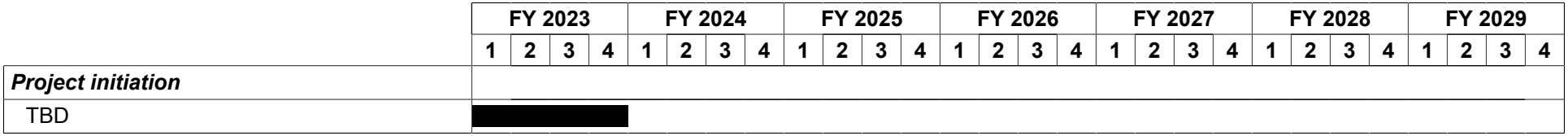


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 729 / *5G Cross Functional Team*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Project initiation				
TBD	4	2022	4	2023

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	153.715	3.058	3.185	2.637	-	2.637	3.073	3.183	3.250	3.316	Continuing	Continuing
015: *Corrosion Protection Projects*	153.715	3.058	3.185	2.637	-	2.637	3.073	3.183	3.250	3.316	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

Public Law 107-314 in sections 2228 and 131 of title 10 United States Code (USC) established the Office of Corrosion Policy and Oversight within the Office of the Secretary of Defense. And section 2228 directed the SecDef to establish a coordinated research and development program for corrosion prevention technologies. The Congressional intent is clear, correct the design and acquisition mechanisms that facilitate poor corrosion prevention decisions that translate to unnecessary system lifecycle cost increases and reduction to readiness. The Government Accountability Office (GAO), the Congressional Budget Office and the DoD IG have conducted multiple weapon systems sustainment and availability audits and continue to find corrosion is a significant impact on availability. GAO's Aviation Sustainment Quick Look reports consistently show that 33% of the audited aviation systems report corrosion as a factor in reduced Operational Availability rates. F-35 acquisition decisions and resulting corrosion maintenance issues serves as a current example of the continued flawed approach to weapon system corrosion prevention. Corrosion continues to be a major factor in Materiel Availability of weapon systems as well. Material Availability corrosion impact examples include:

- F-22 Reliability and Maintainability Maturation Program total funding requirement increased 100% ($664 million to $1.3 billion) to correct unplanned corrosion issues (GAO-12-447, GAO-14-425)
- The Department of the Navy is deferring shipyard corrosion repairs, allocating a 6%+ cost growth factor for future corrosion repair work. (GAO-22-105032)

These examples illustrate the continued flawed sustainment engineering approach to corrosion prevention during the operational and sustainment phase of fielded weapon systems. In addition, the Maintenance Availability Data Warehouse (MADW), maintained on ADVANA, continues to show a $20 billion corrosion maintenance cost trend.

The DoD RDT&E corrosion program, as defined in 10 USC 2228, is the proactive mechanism to change the department's status quo reactive approach for improving weapon system reliability and maintainability (RAM). The strategic goal of the DoD Corrosion Program is to demonstrate the ability to improve weapon system readiness through the implementation of targeted and effective material and nonmaterial solutions that reduce the corrosion impacts on RAM and affordability of DoD weapon systems and infrastructure. Historically, the program's projects have shown an opportunity to achieve a 17:1 return-on-investment.

This PE supports the implementation of section 2228, title 10 USC and the FY 2022 National Defense Strategy's priorities by maturing technologies that deliver high warfighting value for developing and fielded weapons systems; and Protect and Sustain the Force by driving efficiencies and cost reductions to project and sustain forces globally. The FY 2025 allocated budget to the DoD Corrosion Program represents a 0.013% investment to mitigate a $20 billion annual cost impact.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	3.166	3.185	3.215	-	3.215
Current President's Budget	3.058	3.185	2.637	-	2.637
Total Adjustments	-0.108	0.000	-0.578	-	-0.578
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.062	-			
• SBIR/STTR Transfer	-0.046	-			
• Defense-Wide Topline Adjustment	-	-	-0.578	-	-0.578

Change Summary Explanation

The FY 2024 to FY 2025 decrease represents a programmatic realignment to meet departmental leadership priorities and supports higher priority National Defense Strategies.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604016D8Z / *Department of Defense Corrosion Program*				Project (Number/Name) 015 / *Corrosion Protection Projects*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
015: *Corrosion Protection Projects*	153.715	3.058	3.185	2.637	-	2.637	3.073	3.183	3.250	3.316	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Public Law 107-314 in sections 2228 and 131 of title 10 United States Code (USC) established the Office of Corrosion Policy and Oversight within the Office of the Secretary of Defense. And section 2228 directed the SecDef to establish a coordinated research and development program for corrosion prevention technologies. The Congressional intent is clear, correct the design and acquisition mechanisms that facilitate poor corrosion prevention decisions that translate to unnecessary system lifecycle cost increases and reduction to readiness. The Government Accountability Office (GAO), the Congressional Budget Office and the DoD IG have conducted multiple weapon systems sustainment and availability audits and continue to find corrosion is a significant impact on availability. GAO's Aviation Sustainment Quick Look reports consistently show that 33% of the audited aviation systems report corrosion as a factor in reduced Operational Availability rates. F-35 acquisition decisions and resulting corrosion maintenance issues serves as a current example of the continued flawed approach to weapon system corrosion prevention. Corrosion continues to be a major factor in Materiel Availability of weapon systems as well. Material Availability corrosion impact examples include:

- F-22 Reliability and Maintainability Maturation Program total funding requirement increased 100% ($664 million to $1.3 billion) to correct unplanned corrosion issues (GAO-12-447, GAO-14-425)
- The Department of the Navy is deferring shipyard corrosion repairs, allocating a 6%+ cost growth factor for future corrosion repair work. (GAO-22-105032)

These examples illustrate the continued flawed sustainment engineering approach to corrosion prevention during the operational and sustainment phase of fielded weapon systems. In addition, the Maintenance Availability Data Warehouse (MADW), maintained on ADVANA, continues to show a $20 billion corrosion maintenance cost trend.

The DoD RDT&E corrosion program, as defined in 10 USC 2228, is the proactive mechanism to change the department's status quo reactive approach for improving weapon system reliability and maintainability (RAM). The strategic goal of the DoD Corrosion Program is to demonstrate the ability to improve weapon system readiness through the implementation of targeted and effective material and nonmaterial solutions that reduce the corrosion impacts on RAM and affordability of DoD weapon systems and infrastructure. Historically, the program's projects have shown an opportunity to achieve a 17:1 return-on-investment.

This PE supports the implementation of section 2228, title 10 USC and the FY 2022 National Defense Strategy's priorities by maturing technologies that deliver high warfighting value for developing and fielded weapons systems; and Protect and Sustain the Force by driving efficiencies and cost reductions to project and sustain forces globally. The FY 2025 allocated budget to the DoD Corrosion Program represents a 0.013% investment to mitigate a $20 billion annual cost impact.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Corrosion Prevention and Control Projects and Activities	3.058	3.185	2.637

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Corrosion prevention and control projects and activities are conducted in support of the support of the strategic plan to reduce the impact of corrosion on the cost and availability of DoD equipment and facilities. • Improved Landing Gear Durability for F/A-18E/F Super Hornet evaluating the application of multiple corrosion prevention technologies to improve the landing gear system to improve readiness and reduce cost. • Implementing CPC technologies on LPD-24 (USS Arlington) during April 2023-July 2024 maintenance period. • Modified 5 LPD class ship work specifications incorporating 16 changes implementing the latest corrosion control technologies impacting over 60K sqft of preserved surfaces, the forward and aft composite masts, and 14 bulwark frame locations. • Developed and issued an Engineering Design Memo authorizing the use of 87 new corrosion control technologies for the LPD class ships. • Implemented ZnNi and TGIC Powder Coat coating system on the F/A-18 launch bar. The new protective coating system is expected to reduce the scrap rate of launch bars during overhaul which costs $100K per bar Operational maintenance units are reporting that dem/val launch bar with the new protective coating system is lasting 2x longer than the original coating system, which is a 100% increase in component corrosion reliability. • Delivered corrosion control and coatings training to field- and depot-level workforce to over 100 DoD workforce personnel to implement new CPC technologies and processes, with reduced funding. 330+ on waitlist • Developed a Dashboard that identifies the top corrosion maintenance labor drivers, top corrosion material drivers, and top corrosion drivers by ship hull • Supported the technical revisions to corrosion-related military specifications; Mil-Std-1568 and Mil-Std-1587 are being updated this FY to include the latest CPC process, materials, and technologies. • RDT&E technical report “An Analysis of Variability in Sensitization Behavior of 5083-H131 and the Impacts on Yield Strength” published August 2023 ***FY 2024 Plans:*** Execute follow-on FY 2021 RDT&E project efforts:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Improved Landing Gear Durability for F/A-18E/F Super Hornet evaluating the application of multiple corrosion prevention technologies to improve the landing gear system to improve readiness and reduce cost. • Ship Class Topside Corrosion Control Configuration (CT3C) Implementation multiple corrosion prevention technologies to improve the improve ship operational sustainment and reduce cost Execute follow-on FY 2023 RDT&E project efforts: • Demonstrate Thermal Spray Nonskid (TSN) coating technology on DDG Class Ship to verify application on thinner decking plate ship applications. • Demonstrate an Improved Epoxy Coating to improve the hot corrosion resistance of exhaust pathways on DDG Class Ships. Execute following new start FY 2024 RDT&E projects: • Composite Sunshield for Ready Service Lockers – Demonstration • Ultra-Short Pulse Laser Surface Prep for Optimizing Adhesion and Mitigating Corrosion of Marine Connectors ***FY 2025 Plans:*** Execute follow-on FY 2024 RDT&E project efforts: • Composite Sunshield for Ready Service Lockers – Demonstration • Ultra-Short Pulse Laser Surface Prep for Optimizing Adhesion and Mitigating Corrosion of Marine Connectors Execute new start FY 2025 RDT&E projects: • Demonstrate technologies for mitigating electronics corrosion on autonomous assets. • Development of a digital engineering corrosion design tool to assess galvanic corrosion impacts and predict the corrosion lifecycle risks ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease from FY 2024 will reduce the number CPC technology demonstrations and reduce program support by eliminating 3 FTEs.			
Accomplishments/Planned Programs Subtotals	3.058	3.185	2.637

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604016D8Z / *Department of Defense Corrosion Program*	Project (Number/Name) 015 / *Corrosion Protection Projects*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Corrosion Policy and Oversight	MIPR	Various (Army, Navy, Air Force) : Various	120.511	1.319	Oct 2023	1.629	Oct 2024	1.652	Oct 2025	-		1.652	Continuing	Continuing	-
		Subtotal	120.511	1.319		1.629		1.652		-		1.652	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Research Studies	C/FFP	Various : Various	3.544	0.100	Sep 2023	0.100	Sep 2024	0.000		-		0.000	Continuing	Continuing	-
Technical Support	MIPR	Various (Army, Navy, Air Force) : Various	0.483	0.158	Jun 2023	0.158	Jun 2024	0.158	Jun 2025	-		0.158	Continuing	Continuing	-
Technical Support	Option/ FFP	Leidos, Inc. : Virginia	0.496	-		0.000		0.000		-		0.000	Continuing	Continuing	-
Technical Support	C/FFP	Excet Inc. : Maryland	0.431	0.210	Jun 2023	0.210	Jun 2024	0.330	Jun 2025	-		0.330	Continuing	Continuing	-
Research Studies	MIPR	Various (Army, Navy, Air Force) : Various	-	0.292	Mar 2023	0.200	Oct 2024	0.113		-		0.113	Continuing	Continuing	-
Technical Engineering Services	Option/ FFP	AMPP, Inc. : Houston, TX	-	-		-		0.200	Sep 2026	-		0.200	Continuing	Continuing	-
		Subtotal	4.954	0.760		0.668		0.801		-		0.801	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Critical Compatibility Testing - COVID19 (FY 2020 Congressional-Add)	MIPR	Various (Army, Navy, Air Force) : Various	2.691	-		-		-		-		-	Continuing	Continuing	-
		Subtotal	2.691	-		-		-		-		-	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Corrosion Policy and Oversight	C/FFP	Logistics Management Institute : McLean, VA	24.150	0.791	Feb 2023	0.686	Feb 2024	0.000		-		0.000	Continuing	Continuing	-
Corrosion Policy and Oversight	Option/ FFP	LMI : McLean, VA	1.023	-		0.000		0.000		-		0.000	Continuing	Continuing	-
SBIR/STTR Funding	Allot	OSD : Virginia	0.243	0.046	Jun 2023	0.123	Jun 2024	0.100	Jun 2025	-		0.100	Continuing	Continuing	-
USD(A&S) Management Reserve	Allot	USD(A&S) : Virginia	0.128	0.064	Jun 2023	0.064	Jun 2024	0.064	Jun 2025	-		0.064	Continuing	Continuing	-
Corrosion Policy and Oversight Mgmt Services	Allot	Corrosion Policy and Oversight : Alexandria, VA	0.015	0.015	Oct 2023	0.015	Oct 2024	0.020	Oct 2025	-		0.020	Continuing	Continuing	-
Senior Leadership Directive	Allot	OSD : Virginia	0.000	0.063	Feb 2023	0.000		0.000		-		0.000	Continuing	Continuing	-
		Subtotal	25.559	0.979		0.888		0.184		-		0.184	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	153.715	3.058		3.185		2.637		-		2.637	Continuing	Continuing	N/A

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

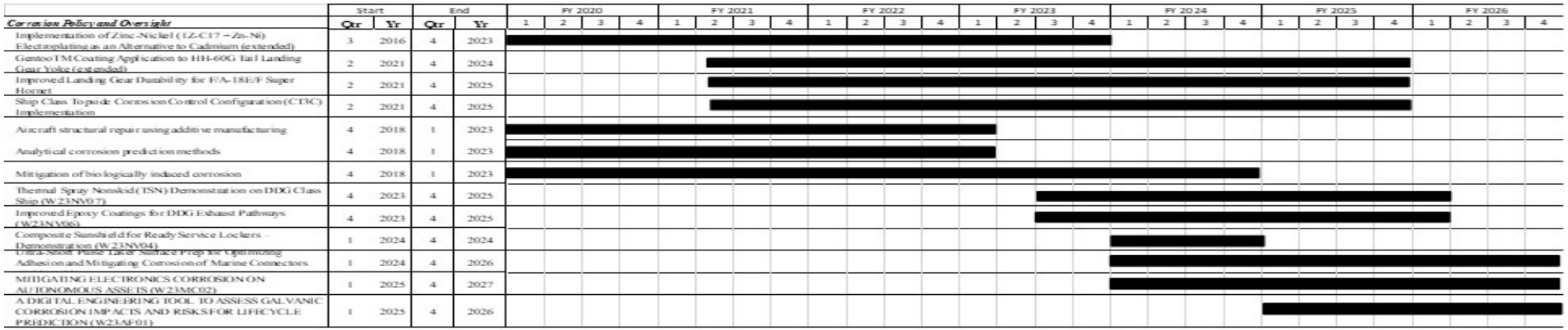

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604016D8Z / *Department of Defense Corrosion Program*	**Project (Number/Name)** 015 / *Corrosion Protection Projects*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Corrosion Policy and Oversight				
Implementation of Zinc-Nickel (1Z-C17 +Zn-Ni) Electroplating as an Alternative to Cadmium (extended)	3	2016	4	2023
GentooTM Coating Application to HH-60G Tail Landing Gear Yoke	2	2021	4	2024
Improved Landing Gear Durability for F/A-18E/F Super Hornet	2	2021	4	2025
Ship Class Topside Corrosion Control Configuration (CT3C) Implementation	2	2021	4	2025
Aircraft structural repair using additive manufacturing	4	2018	1	2023
Analytical corrosion prediction methods	4	2018	1	2023
Mitigation of biologically induced corrosion	4	2018	1	2023
Thermal Spray Nonskid (TSN) Demonstration on DDG Class Ship (W23NV07)	4	2023	4	2025
Improved Epoxy Coatings for DDG Exhaust Pathways (W23NV06)	4	2023	4	2025
Composite Sunshield for Ready Service Lockers -- Demonstration (W23NV04)	1	2024	4	2024
Ultra-Short Pulse Laser Surface Prep for Optimizing Adhesion and Mitigating Corrosion of Marine Connectors (W23NV03)	1	2024	4	2026
Mitigating Electronics Corrosion on Autonomous Assets (W23MC02)	1	2025	4	2027
A Digital Engineering Tool to Assess Galvanic Corrosion Impacts and Risks for Lifecycle Prediction (W23AF01)	1	2025	4	2026

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604124D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - MIP*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	70.783	34.350	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
068: *Intelligence Support*	0.000	70.783	34.350	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

Note

New Start (Y/N): No

Beginning in FY 2025 Program Element funding was realigned under a new project code to correctly align PE funding in support of Chief Digital and Artificial Intelligence Officer (CDAO) priorities. The new project code is: (1) P074 AI/ML Scaffolding. The prior year funding project code did not continue after FY 2023 though the overarching goals of the program element are the same. The new project code refocuses the PE and provides traceability to the current priorities of the CDAO.

A. Mission Description and Budget Item Justification

The Chief Digital and Artificial Intelligence Officer (CDAO) supports the Department's initiatives to build enduring advantage and build a resilient Joint Force and defense ecosystem. The CDAO is responsible for strengthening and integrating data, artificial intelligence, and digital solutions in the Department in support of the National Defense Strategy and Section 1513 of the National Defense Authorization Act (NDAA) for FY 2023.

The functions of the CDAO are as follows: lead and oversee the DoD's strategy development and policy formulation for data, analytics, and AI; break down barriers to data and AI adoption within DoD institutional processes; create enabling digital infrastructure and services that support Components' development and deployment of data, analytics, AI, and digital-enabled solutions; selectively scale proven digital and AI-enabled solutions focused on enterprise and joint use cases; and surge digital services for rapid response to crises and emergent challenges. The CDAO will continue priority projects that align to the mission. This includes expanding the AI integration between the DoD and Intelligence Community (IC); enterprise data repository; establishing a responsible AI ecosystem; executing the AI and Data Accelerator (ADA) initiative; and developing a Data, Analytics, and AI Adoption Strategy. These various lines of effort will support the overarching mission of accelerating the Department's adoption of data, analytics, and AI to preserve decision advantage across the Joint Force.

The CDAO's DoD and IC Integration Division was chartered to create joint interoperability and to harness and scale AI across the DoD and IC jointly, especially within the Defense Intelligence Enterprise. The organizational purpose is to improve coordination and interoperability between DoD and the IC, minimize duplication while maximizing a common approach, and develop an innovated joint AI operational concept and capability, where appropriate. This funding is assigned to support algorithm development, data preparation, and integration experimentation to create joint DoD and IC capabilities. Further details are classified and available upon request.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604124D8Z *I Chief Digital and Artificial Intelligence Officer (CDAO) - MIP*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	70.783	34.350	0.000	-	0.000
Current President's Budget	70.783	34.350	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 068: *Intelligence Support*		
Congressional Add: *Chief Digital and Artificial Intelligence Officer (CDAO) - MIP*	0.000	34.350
Congressional Add Subtotals for Project: 068	0.000	34.350
Congressional Add Totals for all Projects	0.000	34.350

Change Summary Explanation

Congressional add $36.840 in support of Algorithmic Warfare (AW). No change in FY 2025. WHS tax deduction $7.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604124D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - MIP*	Project (Number/Name) 068 / *Intelligence Support*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
068: *Intelligence Support*	0.000	70.783	34.350	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Starting in FY 2025, funds realigned to project 074 AI/ML Scaffolding.

A. Mission Description and Budget Item Justification

The CDAO's DoD and IC Integration Division was chartered to create joint interoperability and to harness and scale AI across the DoD and IC jointly, especially within the Defense Intelligence Enterprise. The organizational purpose is to improve coordination and interoperability between DoD and the IC, minimize duplication while maximizing a common approach, and develop an innovated joint AI operational concept and capability, where appropriate. This funding is assigned to support algorithm development, data preparation, and integration experimentation to create joint DoD and IC capabilities. Further details are classified and available upon request.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Project Maven	70.783	0.000	-
Description: The CDAO's DoD and IC Integration Division is chartered to create joint interoperability and to harness and scale AI across the DoD and IC jointly, especially within the Defense Intelligence Enterprise in support of the National Defense Strategy. The organizational purpose is to improve coordination and interoperability between DoD and the IC, minimize duplication while maximizing a common approach, and develop an innovated joint AI operational concept and capability, where appropriate. This funding is assigned to support algorithm development, data preparation, and integration experimentation to create joint DoD and IC capabilities. Further details are classified and available upon request. ***FY 2024 Plans:*** FY 2024 plans are classified and available upon request. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 funding was realigned to P074 AI/ML Scaffolding.			
Accomplishments/Planned Programs Subtotals	70.783	0.000	-

	FY 2023	FY 2024
Congressional Add: Chief Digital and Artificial Intelligence Officer (CDAO) - MIP	0.000	34.350

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604124D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - MIP*	**Project (Number/Name)** 068 / *Intelligence Support*

	FY 2023	FY 2024
FY 2023 Accomplishments: FY 2023 plans are classified and available upon request. ***FY 2024 Plans:*** FY 2024 plans are classified and available upon request.		
Congressional Adds Subtotals	0.000	34.350

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604124D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - MIP*	**Project (Number/Name)** 068 / *Intelligence Support*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	C/Various	TBD : TBD	-	70.783		34.350		-		-		-	Continuing	Continuing	N/A
		Subtotal	-	70.783		34.350		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	70.783		34.350		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604124D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - MIP*	**Project (Number/Name)** 068 / *Intelligence Support*

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Project Maven																												
Project Maven																												■

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Project Maven																												
Project Maven	■	■	■	■	■	■	■	■	■	■	■	■																

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604124D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - MIP*	**Project (Number/Name)** 068 / *Intelligence Support*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Project Maven				
Project Maven	4	2022	4	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604125D8Z *I Advanced Manufacturing Components and Prototypes*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	16.776	-	16.776	45.649	59.363	65.713	67.027	Continuing	Continuing
232: *Advanced Manufacturing Components and Prototypes*	0.000	0.000	0.000	16.776	-	16.776	45.649	59.363	65.713	67.027	Continuing	Continuing

Note

New Start (Y/N): Yes

The National Defense Strategy (NDS) directs the Department of Defense (DoD) to seed opportunities in critical technology areas, including biotechnology, as part of our broader responsibility to ensure enduring U.S. technological advantage, and the Department will use this program element to execute the Administration's vision for advanced manufacturing of critical technologies. Projects under this program element (PE) will mature manufacturing processes to support the transition of advanced manufacturing components and prototypes to address warfighter needs. Initial funding for this PE is focused on requirements emerging from the Defense Biomanufacturing Strategy, which is guiding the execution of Manufacturing Enabled by Modular and Reusable (MEMBR) assets initiative investments to scale up domestic manufacturing of bioindustrial products.

A. Mission Description and Budget Item Justification

The Advanced Manufacturing Components and Prototypes (AMCAP) program element is established to validate the build and/or expansion of advanced manufacturing infrastructure and conduct research, develop, test, and evaluation (RDT&E) to facilitate development and transition of promising advanced manufacturing technologies to higher manufacturing readiness levels (MRL) via component and prototype development. Projects conducted under this program element will cover the full range of technologies critical to the Department of Defense (DoD) and manufacturing technologies with dual-use commercial applications to support the industrial base that will supply the DoD.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	16.911	-	16.911
Current President's Budget	0.000	0.000	16.776	-	16.776
Total Adjustments	0.000	0.000	-0.135	-	-0.135
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-0.169	-	-0.169

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604125D8Z *I Advanced Manufacturing Components and Prototypes*

• Economic Assumptions	-	-	0.034	-	0.034

Change Summary Explanation

As a new start in FY 2025, the $16.742 million will fund advanced manufacturing prototype projects in technology areas critical to the Department of Defense (DoD) including one or more projects for scale-up of biotechnology products developed for DoD.

A reduction of $0.169 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.034 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604125D8Z / *Advanced Manufacturing Components and Prototypes*	Project (Number/Name) 232 / *Advanced Manufacturing Components and Prototypes*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
232: *Advanced Manufacturing Components and Prototypes*	0.000	0.000	0.000	16.776	-	16.776	45.649	59.363	65.713	67.027	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Advanced Manufacturing Components and Prototypes (AMCAP) project is established to validate the build and/or expansion of advanced manufacturing infrastructure and conduct research, develop, test, and evaluation (RDT&E) to facilitate development and transition of promising advanced manufacturing technologies to higher manufacturing readiness levels (MRL) via component and prototype development across multiple technology areas.

With initial emphasis in the bioindustrial manufacturing area, the project will advance the scale up production of molecules of interest. Through the biotechnology Manufacturing Enabled by Modular Bioindustrial & Reusable (MEMBR) assets initiative, the project will establish a network of flexible manufacturing facilities to scale-up promising biotechnology capabilities for integration into DoD missions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Pilot-Scale Production of Bioindustrial Products	-	-	16.776
Description: Bioindustrial projects to scale up promising molecules utilizing flexible bioindustrial manufacturing facilities. Biotechnology activities could include, but are not limited to, initial pilot or production scale batches, producing material needed for qualification to a military or commercial specification, test batches to facilitate the technology transfer from a pilot facility to an industrial scale facility, development of downstream processing techniques at scale, standard operating procedure (SOP) development, and test and evaluation. The biotechnology projects are to be performed in bioindustrial infrastructure funded by DoD. ***FY 2025 Plans:*** Conduct bioindustrial initial pilot or production scale batches of candidate molecules to prove capability to produce material for military needs. Prepare test batches to facilitate technology transfer of products to available industrial scale facilities and develop downstream processing techniques supporting production at scale. Develop and apply initial standard operating procedures (SOP) for at scale production. Conduct test and evaluation to validate and prove processes used. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** As a new start, the FY 2025 funding of $16.776 million will enable multiple scale-up projects of bioindustrial technology products developed for the Department of Defense.			
Accomplishments/Planned Programs Subtotals	-	-	16.776

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604125D8Z / *Advanced Manufacturing Components and Prototypes*	**Project (Number/Name)** 232 / *Advanced Manufacturing Components and Prototypes*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604125D8Z / *Advanced Manufacturing Components and Prototypes*	Project (Number/Name) 232 / *Advanced Manufacturing Components and Prototypes*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technoeconomic analyses & feasibility assessments	C/TBD	TBD : Multiple Locations	-	-		-		1.517		-		1.517	Continuing	Continuing	1.550
Technology transfer and process flow	C/TBD	TBD : TBD	-	-		-		3.377		-		3.377	Continuing	Continuing	3.411
Pilot process optimization and production of biomaterials	C/Various	TBD : Multiple Locations	-	-		-		9.000		-		9.000	Continuing	Continuing	9.000
		Subtotal	-	-		-		13.894		-		13.894	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Qualification testing of biomaterial to military and/ or industrial specifications	C/TBD	AFRL and TBD : Wright-Patterson AFB and Other Location	-	-		-		1.466		-		1.466	Continuing	Continuing	1.500
		Subtotal	-	-		-		1.466		-		1.466	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Bioindustrial Scale-Up Management Services	C/TBD	BioMADE Manufacturing Innovation Institute : Twin Cities, MN and Emeryville, CA	-	-		-		1.416		-		1.416	Continuing	Continuing	1.450
		Subtotal	-	-		-		1.416		-		1.416	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604125D8Z / *Advanced Manufacturing Components and Prototypes*	Project (Number/Name) 232 / *Advanced Manufacturing Components and Prototypes*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		16.776		-		16.776	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604125D8Z / *Advanced Manufacturing Components and Prototypes*	**Project (Number/Name)** 232 / *Advanced Manufacturing Components and Prototypes*

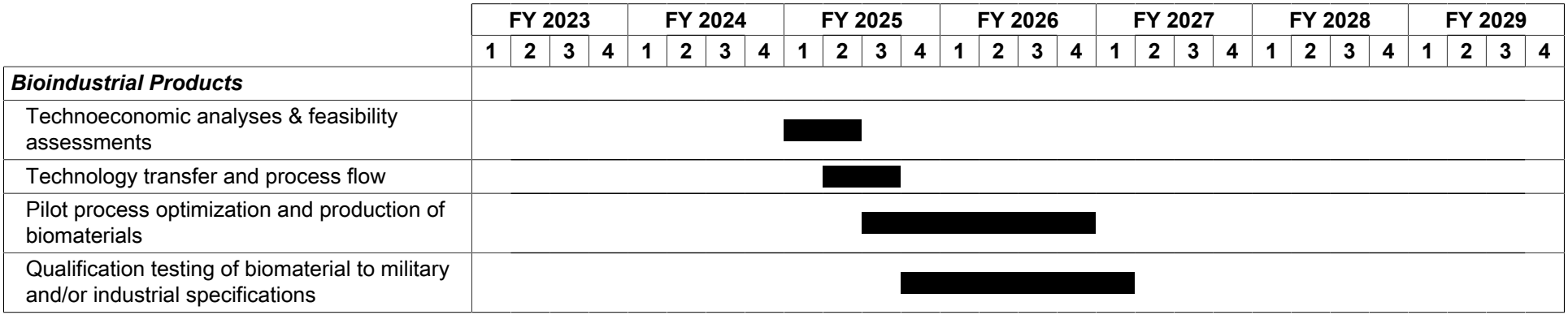


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604125D8Z / *Advanced Manufacturing Components and Prototypes*	**Project (Number/Name)** 232 / *Advanced Manufacturing Components and Prototypes*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Bioindustrial Products				
Technoeconomic analyses & feasibility assessments	1	2025	2	2025
Technology transfer and process flow	2	2025	3	2025
Pilot process optimization and production of biomaterials	3	2025	4	2026
Qualification testing of biomaterial to military and/or industrial specifications	4	2025	1	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	6,596.780	1,116.024	1,085.826	994.226	-	994.226	1,022.712	1,044.364	1,061.162	1,083.450	Continuing	Continuing
250: *Advanced Innovative Technologies*	6,596.780	1,116.024	1,085.826	994.226	-	994.226	1,022.712	1,044.364	1,061.162	1,083.450	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

In support of the NDS Strategy of Deterring Aggression While Being Prepared to Prevail in Conflict, the Strategic Capabilities Office (SCO) develops, demonstrates, and transitions operationally impactful capabilities and effects to shape and counter emerging threats and increase the lethality of the Joint Force in contested environments. The SCO combines innovation with concepts of operation to develop novel capabilities solving critical national security challenges in partnership with the Services, Defense Agencies, Combatant Commands (CCMDS), Joint Chiefs of Staff, Intelligence Community, and the Office of the Secretary of Defense (OSD).

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	1,147.555	1,085.826	777.791	-	777.791
Current President's Budget	1,116.024	1,085.826	994.226	-	994.226
Total Adjustments	-31.531	0.000	216.435	-	216.435
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.116	-			
• SBIR/STTR Transfer	-31.415	-			
• Program adjustment	-	-	216.435	-	216.435

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 250: *Advanced Innovative Technologies*		
Congressional Add: *Pele Mobile Nuclear Microreactor*	17.000	-
Congressional Add: *Pele Second Source*	20.000	-
Congressional Add: *Seaman's Eye*	8.000	-
Congressional Add: *Service Tactical Signal Intelligence Upgrades*	10.000	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604250D8Z *I Advanced Innovative Technologies*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *LIDAR C-UAS automated target Recognition*	5.000	-
Congressional Add Subtotals for Project: 250	60.000	-
Congressional Add Totals for all Projects	60.000	-

Change Summary Explanation

FY 2023 was reduced for SBIR/STTR transfers to the executing program, and reduced for cancelled accounts.
FY 2025 is increased from previous budget request, to maintain the Strategic Capabilities Office's development of operationally impactful capabilities across the FYDP.

SCO's FY 2025 Pacific Deterrence Initiative (PDI) spending under Exercises, Training, Experimentation, and Innovation has decreased by $90.2 million to $910.426 million, with five new capability projects transition into Execution in FY 2025.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604250D8Z / *Advanced Innovative Te chnologies*	Project (Number/Name) 250 / *Advanced Innovative Technologies*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
250: *Advanced Innovative Technologies*	6,596.780	1,116.024	1,085.826	994.226	-	994.226	1,022.712	1,044.364	1,061.162	1,083.450	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Strategic Capabilities Office (SCO) develops, demonstrates, and transitions operationally impactful capabilities and effects to shape and counter emerging threats and increase the lethality of the Joint Force in contested environments. The SCO combines innovation with concepts of operation and information management to develop novel capabilities solving critical national security challenges in partnership with the Services, Defense Agencies, Combatant Commands (CCMDS), Joint Chiefs of Staff, Intelligence Community, and the Office of the Secretary of Defense (OSD).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Advanced Innovative Technologies Project Management	48.476	51.289	53.975
Description: SCO has a small, WHS-funded, government civilian workforce, and relies on this project to fund the required additional labor for subject matter experts and programmatic support teams to help centrally manage the execution of the SCO prototype development portfolio. This project funds the travel for government employees and salaries for detailed staff, Inter-governmental Personnel Act participants, and Systems Engineering and Technical Assistance (SETA) contract staff that manage SCO's projects, studies, and test support. This staff annually supports 20-24 prototype project teams, the on-going study and development of additional concepts, and the office support functions like: program security representatives, intelligence, Information Technology, and finance and accounting support staff required to enable the project teams. ***FY 2024 Plans:*** These funds provide for SCO labor and travel to support the 20-24 project teams that are active each fiscal year. ***FY 2025 Plans:*** These funds provide for SCO labor and travel to support the 20-24 project teams that are active each fiscal year. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase from FY 2024 to FY 2025 is due to inflation of SETA support contract costs.			
Title: Asgard	-	-	45.000
Description: Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Asgard enters the prototyping phase in FY 2025.			
Title: Avatar ***Description:*** The Avatar project develops enhanced manned-unmanned capabilities. Due to the nature of this project, specific applications and detailed plans are available at a higher classification level. The project will be completed with FY 2023 funding.	11.151	-	-
Title: Bedlam ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change is consistent with the planned project phasing which is available at higher classification levels.	1.685	13.815	10.500
Title: Black Hole Sun ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change is consistent with the planned project phasing which is available at higher classification levels.	-	8.200	24.400
Title: Classified Projects	546.338	516.263	247.120

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Due to the classified nature of these projects, specific applications and details are available at a higher classification level. ***FY 2024 Plans:*** Due to the classified nature of these projects, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of these projects, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change is consistent with the planned projects phasing which are available at higher classification levels.			
Title: Complete Pivot ***Description:*** Complete Pivot develops and demonstrates tactical command, control and communication capability in relevant combat environments. Due to the nature of this project, specific applications and detailed plans are available at a higher classification. The project will be completed with FY 2023 funding.	2.830	-	-
Title: Eclipse ***Description:*** The Eclipse project accelerates the maturation and fielding of emerging disruptive technologies. Specific applications and detailed plans are available at a higher classification level. The project will be completed with FY 2024 funding. ***FY 2024 Plans:*** Project is completed in first quarter of FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Project is complete.	10.816	0.684	-
Title: Emerging Opportunities ***Description:*** Implementation of small new capabilities or augmentations as a result of latest intelligence and threats analysis. Highest impact projects will be selected in the execution year based upon the most recent intelligence to accelerate capabilities by up to 2 years. ***FY 2024 Plans:*** Opportunities will be selected during the execution year. ***FY 2025 Plans:***	13.900	11.500	11.600

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Opportunities will be selected during the execution year. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 budget remains consistent with original plan for FY 2024 with minor increases due to inflationary growth.			
Title: Equinox ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change is consistent with the planned project phasing which is available at higher classification levels.	-	8.800	28.800
Title: Galaxian ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change is consistent with the planned project phasing which is available at higher classification levels.	10.750	13.450	10.800
Title: Gollum ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 Plans:***	-	4.300	24.300

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change is consistent with the planned project phasing which is available at higher classification levels.			
Title: Hailstone ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Home Alone enters the prototyping phase in FY 2025.	-	-	26.000
Title: Hoover ***Description:*** The Hoover project applies machine learning algorithms and techniques in order to reduce operator workload and data throughput requirements. Due to the classified nature of this project, specific applications and detailed plans are available at a higher classification. ***FY 2024 Plans:*** The project will be completed with FY 2024 funding. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The project is completed in FY 2024.	12.500	2.400	-
Title: Hurt Locker ***Description:*** The Hurt Locker project demonstrates feasibility and utility of alternative system deployment. This program will retire risks associated with cross platform integration of existing weapons control systems. Due to the nature of this project, specific applications and detailed plans are available at a higher classification. ***FY 2024 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:***	47.075	31.000	36.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change is consistent with the planned project phasing which is available at higher classification levels.			
Title: Hypervelocity Gun Weapon System (HGWS) ***Description:*** Cost-effective, large magazine small area defense will be demonstrated by closing the fire control loop between sensors and prototype projectiles launched from existing families of powder gun cannons. Due to the nature of this project, specific applications and detailed plans are available at a higher classification level. ***FY 2024 Plans:*** The HGWS project will build multiple complete prototypes for testing and demonstration, including advanced threat engagement testing, to prepare for and and support a Department transition and acquisition decision. ***FY 2025 Plans:*** The HGWS project will complete activities to support Army testing and evaluation for a Department transition and acquisition decision. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change supports the completion of the HGWS project activities.	108.145	194.300	165.075
Title: Kenobi ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change is consistent with the planned project phasing which is available at higher classification levels.	35.550	56.400	43.000
Title: Lazarus ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level.	-	-	50.600

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 Plans: Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Lazarus enters the prototyping phase in FY 2025.			
Title: Mission Support Infrastructure ***Description:*** These funds provide facility and information technology support costs for the Strategic Capabilities Office. Costs include: building lease payments, utilities, upkeep and refurbishment; physical security; supplies, office furnishings and communications equipment; video teleconferencing suites across multiple security levels; and information technology hardware systems and software licenses across multiple levels of security for the entire SCO staff. ***FY 2024 Plans:*** SCO is gradually migrating away from its dependence on DARPA for its information technology. In FY 2024 SCO will migrate it's TS/SCI network from DARPA JWICS Network (DJN) to DIA's Common Operations Environment (COE). Additionally, SCO will investigate suitable options for Special Access Program (SAP) data and plan the migration from SAV. SCO, and all other 4th Estate agencies, have been directed to use DISA DoDNET for both unclassified and secret network communications. In FY 2024 SCO will initiate the migration planning with DISA for DoDNET-U and DoDNET-S. SCO will continue to replace outdated and obsolete laptop, desktop, and iPhone endpoints for the remainder of SCO staff and provide help desk services for all classified and unclassified networks. ***FY 2025 Plans:*** SCO is planning on two significant system migrations in FY 2025. Firstly, SCO will start using DISA DoDNET and must fund both the continued use of DARPA DMSS and DSN while also paying DISA for newly deployed services. Secondly, SCO is planning the migration of its SAP system from SAV to a cloud-based service in FY 2025 and will have higher than normal costs through the transition. Once the migration away from DMSS, DSN, and SAV is complete continued payment to DARPA will only be for the DSWAN system. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase from FY 2024 to FY 2025 is due to two significant system migrations for unclassified, secret, and SAP information systems.	17.880	18.100	23.000
Title: Oculus Prime	0.000	0.000	19.100

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Te chnologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Raven enters the prototyping phase in FY 2025.			
Title: Pele ***Description:*** Develop a prototype transportable nuclear microreactor to be demonstrated by FY 2025 that can generate 1-5 MW of electric power, is transportable in standard shipping containers, and meets safety, legal, and regulatory requirements to minimize risk of radiation exposure, nuclear proliferation, and environmental impact. In addition, testing, modeling, and analysis will be performed to prepare for future service transition decisions. ***FY 2024 Plans:*** Complete necessary work to receive Department of Energy approval of the Final Safety Analysis Report (FSAR). Manufacture major reactor components and prepare to complete the reactor build and integration testing in early FY 2025. Complete fabrication of the HALEU TRISO particles and compacts for the reactor core. The project will continue to support BWXT in seeking regulatory approval for U.S. highway transportation of the post-operation reactor. Pele will facilitate and support the development of requirements for future Service transition, and training of operators to support prototype testing at INL. Survivability testing will continue, with specific tests and details available at a higher classification level. ***FY 2025 Plans:*** Assemble the four Pele modules. Achieve certification of the final reactor module so that it is eligible for a flight on a C-17. Fabricate the necessary hardware (e.g. concrete pads) at the test site at Idaho National Labs (INL) to prepare for the arrival of the fully fueled reactor. Acquire temporary trailers and all other infrastructure necessary to support initial operations of the Pele reactor. Initial operators will begin training in Pele simulator. The SCO team will continue to support BWXT in its regulatory work with NRC in support of future transport on public highways. SCO will also support the development of requirements for a potential Service transition. Survivability testing will continue, with specific tests and details available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	130.500	85.200	83.800

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The decrease of $45.3 million supports a development cycle with the Pele reactor delivered in FY 2025.			
Title: Point Break ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The project will be completed with FY 2024 funds.	39.700	21.500	-
Title: Providence ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change is consistent with the planned project phasing which is available at higher classification levels.	8.525	13.125	13.000
Title: Quiet Riot ***Description:*** The Quiet Riot project will leverage previous investments to demonstrate the feasibility of providing Combatant Commanders additional options. Due to the classified nature of this project, specific applications and detailed plans are available at a higher classification. The project will be completed with FY 2023 funds.	0.953	-	-
Title: Rolling Dice ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:***	-	-	23.600

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Rolling Dice enters the prototyping phase in FY 2025.			
Title: Scornful Mustang ***Description:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2025 Plans:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The change is consistent with the planned project phasing which is available at higher classification levels.	-	5.400	27.000
Title: Shawshank ***Description:*** The Shawshank program provides Special Operations Forces new and enhanced capabilities. Specific applications and detailed plans are available at a higher classification level. The project will be completed with FY 2023 funds	9.250	-	-
Title: Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) ***Description:*** Each year, 3.2% of SCO's extramural R&D budget is transferred to the Department's SBIR program to fund small businesses through the SBIR program. An additional 0.45% of SCO's extramural R&D budget is transferred for the STTR program. This project is a placeholder for the budget prior to transfer, based upon SCO's estimated share of extramural research and development. ***FY 2024 Plans:*** Estimated transfer based upon planned extramural research and development funding. ***FY 2025 Plans:*** Estimated transfer based upon planned extramural research and development funding. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Change reflects change in planned extramural research and development funding	-	30.100	27.556
Accomplishments/Planned Programs Subtotals	1,056.024	1,085.826	994.226

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

	FY 2023	FY 2024
Congressional Add: Pele Mobile Nuclear Microreactor ***FY 2023 Accomplishments:*** FY 2023 Plans are shown under Project Pele above.	17.000	-
Congressional Add: Pele Second Source ***FY 2023 Accomplishments:*** Modify and develop design of a second micro nuclear reactor able to generate 1-5 MW of electric power meeting safety, legal, and regulatory requirements for military applications. This reactor will be designed to be complementary to the Pele reactor whose fabrication is already underway, with greater power levels and lower costs per unit energy sought, in exchange for decreased mobility.	20.000	-
Congressional Add: Seaman's Eye ***FY 2023 Accomplishments:*** Seaman's Eye will develop new projects to support autonomous mission and navigation planning .	8.000	-
Congressional Add: Service Tactical Signal Intelligence Upgrades ***FY 2023 Accomplishments:*** Due to the classified nature of this project, specific applications and details are available at a higher classification level.	10.000	-
Congressional Add: LIDAR C-UAS automated target Recognition ***FY 2023 Accomplishments:*** Under development	5.000	-
Congressional Adds Subtotals	60.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Asgard	Various	Various : Various	-	-		-		45.000		-		45.000	157.000	202.000	-
Avatar	Various	Various : Various	257.288	11.151		-		-		-		-	0.000	268.439	-
Bedlam	Various	Various : Various	-	11.685		13.815		10.500		-		10.500	0.000	36.000	-
Black Hole Sun	Various	Various : Various	-	-		8.200		24.400		-		24.400	18.900	51.500	-
Classified Projects	Various	Various : Various	853.202	546.338		516.263		247.120		-		247.120	Continuing	Continuing	-
Complete Pivot	Various	Various : Various	30.897	2.830		-		-		-		-	0.000	33.727	-
Eclipse	Various	Various : Various	61.841	10.816		0.684		-		-		-	0.000	73.341	-
Emerging Opportunities	Various	Various : Various	-	13.900		11.500		11.600		-		11.600	Continuing	Continuing	-
Equinox	Various	Various : Various	-	-		8.800		28.800		-		28.800	15.500	53.100	-
Galaxian	Various	Various : Various	-	10.750		13.450		10.800		-		10.800	1.000	36.000	-
Gollum	Various	Various : Various	-	-		4.300		24.300		-		24.300	20.500	49.100	-
Hailstone	Various	Various : Various	-	-		-		26.000		-		26.000	11.000	37.000	-
Hoover	Various	Various : Various	261.904	12.500		2.400		-		-		-	0.000	276.804	-
Hurt Locker	Various	Various : Various	195.392	47.075		31.000		36.000		-		36.000	108.000	417.467	-
HGWS	Various	Various : Various	802.636	108.145		194.300		165.075		-		165.075	0.000	1,270.156	-
Kenobi	Various	Various : Various	-	35.550		56.400		43.000		-		43.000	14.750	149.700	-
Lazarus	Various	Various : Various	-	-		-		50.600		-		50.600	104.250	154.850	-
Oculus Prime	Various	Various : Various	-	-		-		19.100		-		19.100	131.900	151.000	-
Pele	Various	Various : Various	250.000	147.500		85.200		83.800		-		83.800	41.200	607.700	-
Point Break	Various	Various : Various	28.600	39.700		21.500		-		-		-	0.000	89.800	-
Providence	Various	Various : Various	-	8.525		13.125		13.000		-		13.000	3.500	38.150	-
Quiet Riot	Various	Various : Various	24.933	0.953		-		-		-		-	0.000	25.886	-
Rolling Dice	Various	Various : Various	-	-		-		23.600		-		23.600	81.400	105.000	-
Scornful Mustang	Various	Various : Various	-	-		5.400		27.000		-		27.000	105.200	137.600	-
Shawshank	Various	Various : Various	188.697	9.250		-		-		-		-	0.000	197.947	-
Completed Projects	Various	Various : Various	3,572.925	-		-		-		-		-	Continuing	Continuing	-
Seaman's Eye	Various	Various : Various	3.000	8.000		-		-		-		-	0.000	11.000	-
Pele Second Source	Various	Various : Various	-	20.000		-		-		-		-	0.000	20.000	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604250D8Z / *Advanced Innovative Technologies*	Project (Number/Name) 250 / *Advanced Innovative Technologies*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LIDAR C-UAS ATR	Various	Various : Various	-	5.000		-		-		-		-	0.000	5.000	-
		Subtotal	6,531.315	1,049.668		986.337		889.695		-		889.695	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Support Infrastructure	Option/ Various	Facility and IT support to SCO : Chantilly VA, Arlington VA	12.307	17.880		18.100		23.000		-		23.000	Continuing	Continuing	-
SBIR/STTR	Various	SBIR/STTR transfer funds : Various	-	-		30.100		27.556		-		27.556	Continuing	Continuing	-
		Subtotal	12.307	17.880		48.200		50.556		-		50.556	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Innovative Technologies Project Management	Option/ Various	Labor and Travel : Various	53.158	48.476		51.289		53.975		-		53.975	Continuing	Continuing	-
		Subtotal	53.158	48.476		51.289		53.975		-		53.975	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6,596.780	1,116.024		1,085.826		994.226		-		994.226	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

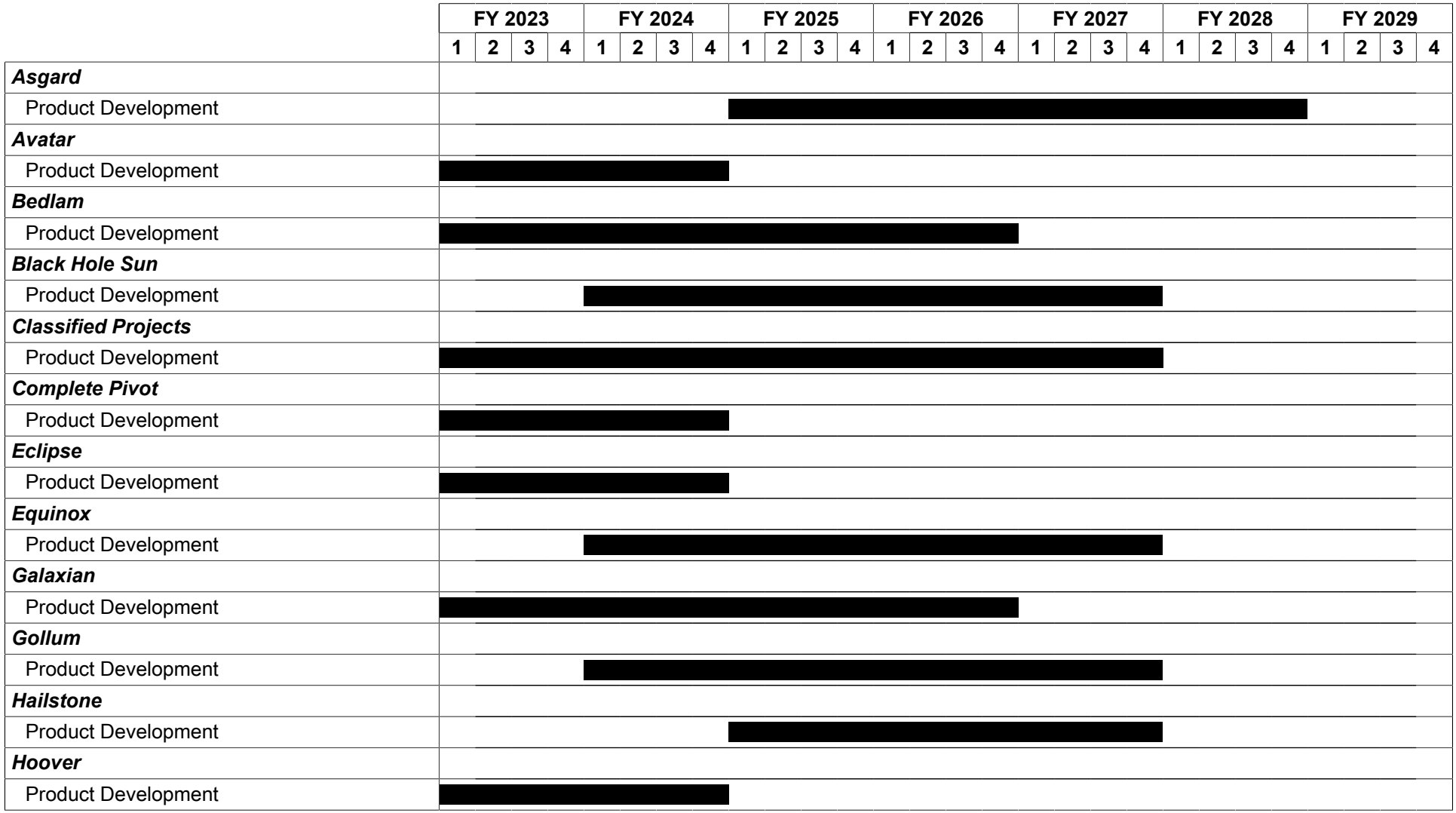


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

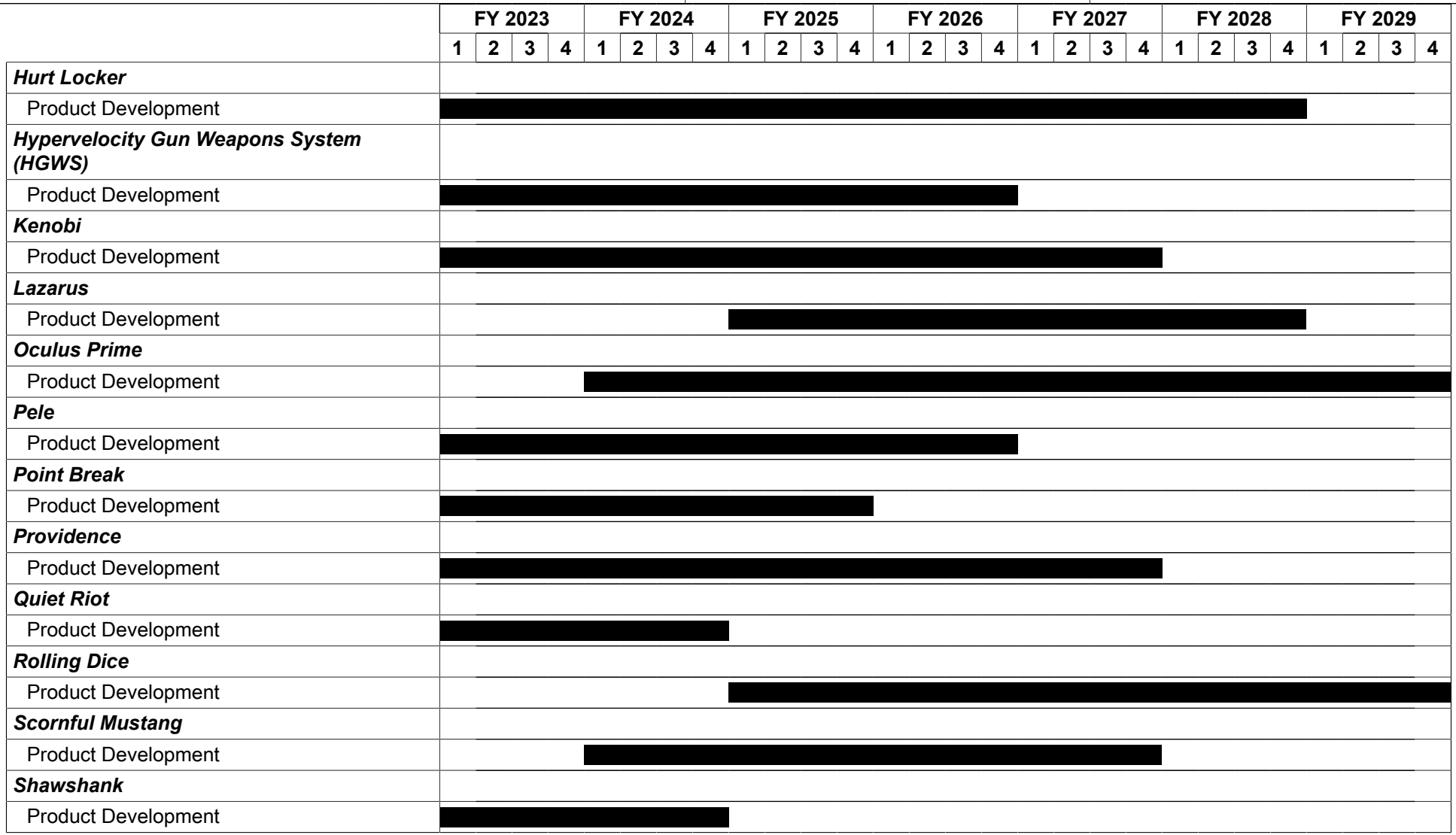


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Asgard				
Product Development	1	2025	4	2028
Avatar				
Product Development	1	2023	4	2024
Bedlam				
Product Development	1	2023	4	2026
Black Hole Sun				
Product Development	1	2024	4	2027
Classified Projects				
Product Development	1	2023	4	2027
Complete Pivot				
Product Development	1	2023	4	2024
Eclipse				
Product Development	1	2023	4	2024
Equinox				
Product Development	1	2024	4	2027
Galaxian				
Product Development	1	2023	4	2026
Gollum				
Product Development	1	2024	4	2027
Hailstone				
Product Development	1	2025	4	2027

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Hoover				
Product Development	1	2023	4	2024
Hurt Locker				
Product Development	1	2023	4	2028
Hypervelocity Gun Weapons System (HGWS)				
Product Development	1	2023	4	2026
Kenobi				
Product Development	1	2023	4	2027
Lazarus				
Product Development	1	2025	4	2028
Oculus Prime				
Product Development	1	2024	4	2029
Pele				
Product Development	1	2023	4	2026
Point Break				
Product Development	1	2023	4	2025
Providence				
Product Development	1	2023	4	2027
Quiet Riot				
Product Development	1	2023	4	2024
Rolling Dice				
Product Development	1	2025	4	2029
Scornful Mustang				
Product Development	1	2024	4	2027
Shawshank				

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604250D8Z / *Advanced Innovative Technologies*	**Project (Number/Name)** 250 / *Advanced Innovative Technologies*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Product Development	1	2023	4	2024

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	2,370.567	624.272	810.839	593.609	-	593.609	529.369	455.444	439.511	449.770	Continuing	Continuing
907: *Access to State-of-the-Art (SOTA) Microelectronics - Development*	1,884.670	262.818	311.120	160.435	-	160.435	157.533	156.926	161.416	165.563	Continuing	Continuing
908: *Access to Advanced Packaging and Testing - Development*	153.781	68.221	90.199	92.404	-	92.404	91.055	63.751	65.278	66.700	Continuing	Continuing
911: *Access to Radiation Hardened RF and Opto-Electronic Development*	219.572	196.908	279.416	210.076	-	210.076	151.674	124.347	124.058	126.762	Continuing	Continuing
912: *Create an Evidence-Based Assured Microelectronics Pipeline*	112.544	92.401	126.081	130.694	-	130.694	129.107	110.420	88.759	90.745	Continuing	Continuing
913: *Defense Microelectronics Cross-Functional Team Funding*	0.000	3.924	4.023	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

Note

New Start (Y/N): No

FY 2024: An Errata was approved to realign $50.000 million to Procurement, DW, Major Equipment, OSD to support the Accelerate Procurement and Fielding of Innovative Technologies (APFIT) program. These funds are realigned from Project 907, Access to State-of-the-Art (SOTA) Microelectronics - Development. The current plan of $311.120 will decrease to $261.120 million.

A. Mission Description and Budget Item Justification

This program supports microelectronics modernization activities that enable defense systems to keep pace with commercial microelectronics technological advances, reduce reliance on obsolete microelectronics, and mitigate the Department's reliance on sole source foundries for assured state-of-the-art (SOTA) microelectronics. It addresses the challenges of 1) having enduring access to a multiplicity of modern manufacturing processes that require commercial volumes to maintain long term viability and 2) protecting the intellectual property (IP) of the microelectronic parts that are manufactured.

Microelectronics technology is a critical enabler for the development of new systems and sustainment of fielded systems required for all four 2022 National Defense Strategy (NDS) priorities. In addition, this program directly supports the NDS priority of building a resilient Joint Force and defense ecosystem through modernization of key capabilities and fostering pathways to adapt SOTA commercial and dual-use technologies to Defense needs. This program also supports the NDS objective of

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604294D8Z *I Trusted and Assured Microelectronics*

Making the Right Technology Investments by supporting the domestic microelectronics innovation ecosystem and partnering with industry to quickly incorporate market-driven commercial advances with military-relevant capabilities.
This program supports the OUSD(R&E) Microelectronics Modernization Roadmap. The primary areas of focus of this roadmap include the following: access to state-of-the-art microelectronics technology, access to advanced packaging and test; access to the best commercial design technology; evidence-based assurance and secure design; foundry access; policies, standards, and Joint Federated Assurance Center (JFAC) governing body; access to radiation hardened microelectronics; access to non-complementary metal oxide semiconductor state-of-the-art (SOTA) microelectronics for radio frequency and optoelectronic applications; education and workforce development; and supply chain awareness and security.

Recognizing that an assured supply of microelectronics is a U.S. Government (USG)-wide concern, this activity will interface with interagency partners to account for interagency requirements, opportunities for collaboration, and strategic decisions that can be made to limit the overall cost of these requirements to the USG.

This activity is being led by the Under Secretary of Defense for Research and Engineering.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	644.326	810.839	749.010	-	749.010
Current President's Budget	624.272	810.839	593.609	-	593.609
Total Adjustments	-20.054	0.000	-155.401	-	-155.401
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-19.990	-			
• Program Adjustments	-	-	-155.401	-	-155.401
• Cancelled Account	-0.064	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 911: *Access to Radiation Hardened RF and Opto-Electronic Development*		
Congressional Add: *GaN and GaAs RFIC technology*	25.000	-
Congressional Add: *Radiation-Hardened Fully-Depleted Silicon-on-Insulator Microelectronics*	38.000	-
Congressional Add: *Advanced Node Radiation-Hardened Fully-Depleted Silicon-on-Insulator Technology*	10.000	-
Congressional Add: *Magnetoresistive Random Access Memory (MRAM)*	3.500	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add Subtotals for Project: 911	76.500	-
Congressional Add Totals for all Projects	76.500	-

Change Summary Explanation

FY 2024: An errata was submitted and approved to realign $50.000 million to Procurement, DW, Major Equipment, OSD to support the Accelerate Procurement and Fielding of Innovative Technologies (APFIT) program.

The FY 2025 decrease of -$155.401 million is due to the following:
1) A realignment of -$50.000M to Procurement, Defense-Wide, Major Equipment, OSD in Program Element 0901388D8Z to support the Accelerate Procurement and Fielding of Innovative Technologies (APFIT) program.
2) A realignment of -$94.900M to Mission Engineering and Integration (ME&I) Program Element 0603142D8Z, Advanced Analytics and Capability Development (A2CD) to support efforts to integrate data, tools and techniques to speed delivery of capabilities to the warfighter. This supports the National Defense Strategy goal to build on our Enduring Advantages.
3) A realignment of -$1.122M to the Defense Innovation Acceleration (DIA) Program Element 0603838D8Z.
4) A reduction of -$6.027M in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.
5) An internal realignment of -$4.550 to move funds to support Program Element 0603379D8Z, Advanced Technical Integration.
6) Funding increase of $1.198 million for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604294D8Z / *Trusted and Assured Microelectronics*	Project (Number/Name) 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
907: *Access to State-of-the-Art (SOTA) Microelectronics - Development*	1,884.670	262.818	311.120	160.435	-	160.435	157.533	156.926	161.416	165.563	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Microelectronics are critical technologies that drive the modern economy and enable the defense systems that allow warfighters to accomplish their missions. Other nations recognize the need to control the microelectronics supply chain and indigenous state-of-the-art (SOTA) manufacturing. Aggressive investments and licit and illicit actions by peer nations threaten U.S. leadership. China alone purports investment of $150 billion and a national strategy to achieve dominance in all major areas of microelectronics by 2030. Russia and China have publicly stated that advanced microelectronics, AI, and machine learning (ML) are the keys to economic and military dominance.

This project funds the operation software assurance (SwA) support to DoD programs and organizations of the Joint Federated Assurance Center (JFAC), established in National Defense Authorization Act (NDAA) Sec 937, to increase DoD's SwA by providing engineering tools, technical services, best practices, innovative technologies and other assistance to programs to detect, assess, prioritize, and mitigate vulnerabilities from malicious software and assurance against supply chain exploitation vulnerabilities. The JFAC will provide capabilities for programs to keep assessment findings throughout the life cycle of their systems for data mining (e.g., documentation on rationale for previous mitigation decisions). The collaboration between the JFAC and program offices will help mitigate existing and emerging critical threats and vulnerabilities in software to all DoD programs.

The project supports the implementation of Executive Order 14028 Improving the Nation's Cybersecurity for software assurance for critical software such as software bill of materials, and information communications technology supply chain risk management, and the PD, Cyber Roadmap for mitigation of software vulnerabilities that are cyber related.

This project includes establishment of new strategic partnerships with existing commercial SOTA domestic foundries to develop a data-driven, risk- based approach to supply chain protection and develop the assured access, secure design, and manufacture of advanced microelectronics technology and electronic components.

Successful implementation will transition these technologies to use in DoD programs, obtain access to multiple commercial microelectronics facilities, establish secure design capabilities, and solidify a data-driven approach to supply chain protection. It also includes keeping pace with the rapid advancements in microelectronics technology and the globalization of this industry sector. It will provide the basics for updating and strengthening DoD assurance policy and includes collaborating with industry to develop data driven evidence-based practices.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Joint Federated Assurance Center (JFAC)	10.820	6.956	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: This project's activities will advance the state of the art for trust and assurance by the federated assurance labs for both hardware and software assurance for the DoD enterprise to both accelerate the development of assurance technologies and to ensure the integrity of DoD weapon systems, information systems, and national security systems in direct support of program offices across the life cycle. JFAC is the center that bridges the various federated DoD organizations together across the Joint Services and the National Security Agency (NSA). JFAC advances the development of assurance technologies, offers scalable enterprise assurance capabilities, fosters a thriving assurance ecosystem, and provides access to leading assurance solutions to include policies, guidance, best practices, training, resources, tools, assessments, personnel, source code, and data. ***FY 2024 Plans:*** • Continue to Select and procure quantities of state-of-the-art software assurance (SwA) tools; innovate and advance technology for vulnerability and subverted code detection of binary code in DoD embedded systems; evaluate high payoff open source components required to move DoD systems to the cloud using containers; technology and infrastructure support to programs to determine and mitigate exploitable vulnerabilities; map vulnerabilities and threats to SwA tool capabilities and provide assessments of how well SwA tools and techniques function directly to programs. • Execute enterprise license program procurement of SwA tools. • Continue to align expanding JFAC infrastructure to cloud native environments to support hardware assurance, deploy SwA tools, training, shared experiences, and best tool-use practice directly to programs and organizations. • Develop and make directly available to programs and organizations beyond leading edge acquisition software vulnerability mitigations, standards and technical implementation guidance, workforce training packages, and subject matter expertise. • Continue efforts to support implementation of Executive Order 14028 Improving the Nation's Cybersecurity for software assurance for critical software, and the software bill of materials. • Continue to implement FY 2019 NDAA Section 1655 - Mitigation of risks to national security posed by providers of information technology products and services who have obligations to foreign governments ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $6.956 million between FY 2024 and FY 2025 is due a change in priorities and the funding being realigned to the Mission Engineering and Integration (ME&I) Program Element 0603142D8Z to support efforts to integrate data, tools and techniques to speed delivery of capabilities to the warfighter.			
Title: Access to State-of-the-Art (SOTA) Microelectronics - Development	251.998	304.164	160.435
Description: Foundry Access: This activity implements multiple foundries process design kit (PDK) environments ensuring the government is not dependent			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
on one single source for critical components. Demonstrate hardware through dedicated and multi-project wafer runs at multiple foundries. Commercial foundries generate enormous amounts of data on their processes as a best practice for quality assurance to improve reliability and increase yield. The Foundry program collects and utilizes this data to generate and allow quantitative comparison of performance and security metrics in the design and test stage of the microelectronics lifecycle, thereby mitigating risk. Rapid Access to Microelectronic Prototypes (RAMP): This activity includes developing the ability to fabricate classified and/or export-controlled designs in on-shore commercial foundries. Funding will establish multiple strategic partnerships with existing commercial domestic microelectronics design vendors and foundries to develop a data-driven, risk-based approach to supply chain protection and demonstrate the assured manufacture of advanced electronic components. This project demonstrates the technical means for protecting intellectual property (IP) and obfuscating the final user function from the supply chain will be realized using personalization, programmability and software, following application specific integrated circuit (ASIC) manufacturing. Efforts are on-going to update International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR) policy in this area. Funding supports activities to enhance the export control regime so that it maintains or strengthens current protections while enabling access to commercial capabilities, products, and IP. Rapid Access to Microelectronic Prototypes – Commercial (RAMP-C): This project enables the DoD and the defense industrial base to collaborate with the commercial microelectronics industry to increase prototype development, demonstration, and address the war fighter's need to maintain and modernize weapon systems as the threat landscape shifts. This project enables the Trusted and Assured Microelectronics (T&AM) program to demonstrate, by FY 2025, full access to U.S. commercial state-of-the-art (SOTA) design, foundry, and advanced packaging capability and meet DoD's unique needs within two to three years for modernization, including for radiation hardened (RH) and photonics applications. The capability will reduce the time needed to replace microelectronics components that are generations behind the commercial sector, move away from off-shore sources for SOTA commercial integrated circuits, and accelerate the demonstration and adoption of evidence-based assurance methods throughout the microelectronics lifecycle and supply chain. Reducing the timeline by up to two years not only benefits export control and classified system protection, but also the requirements of Section 224 in FY 2020 National Defense Authorization Act for the DoD to implement commercial standards for			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
the acquisition of assured microelectronics products. ***FY 2024 Plans:*** Foundry Access: • Continue to enhance access to SOTA fabrication ecosystem. • Maintain access to assured fabrication flow and fund multi-project wafer production runs at multiple SOTA domestic sources. RAMP: Continue to mature the RAMP operational capability that will: • Continue to enhance secure design and cloud capability with new tools/techniques. • Continue to utilize traceability and provenance mechanisms to verify and vet data sources in a zero-trust architecture and enhance ability of DoD/Defense Industrial Base to design SOTA microelectronics. • Continue to quantify transition of designs to prototypes and programs of record and maintain persistence in lifecycle assurance data and intellectual property. • Continue to demonstrate rapid transition of DoD-relevant field programmable gate array-based capabilities to structured ASICs, with security capabilities to protect DoD intellectual property (IP) during manufacture. RAMP-C: A leading edge (<7 nanometer), commercially-viable, U.S.-located domestic wafer foundry ecosystem access is established. The ecosystem will have capability on the order of > 26,000 wafer starts per month for design and manufacturing of evidence-based assured, dual-use commercial and DoD custom integrated circuits. This project will enable the following: • Access to a SOTA U.S. wafer foundry. • Access to commercial and critical evidence-based assured dual-use commercial off-the-shelf (COTS) integrated circuits. • Access to capabilities necessary to develop evidence-based assured custom DoD integrated circuits. • The jump-start in commercial use of the domestic foundry by key U.S. fabless companies. • Establishment of a viable design ecosystem including access to 3rd party design modules. • The reduction in the cost differential of building a U.S.-located wafer foundry verses off-shore. • The enablement of commercially-supported and enduring U.S. logic foundry capability. • Leverage the expertise of commercial industry to develop and demonstrate novel capabilities for design of State-of-the Art (SOTA) with assurance.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Cloud/Electronic Design Automation (EDA): • Continue activities for prototype demonstration of an emulation based evidence-based assurance design flows • Continue efforts to raise the technology readiness level (TRL) of pilot emulation efforts to production readiness by standardizing the cloud-based emulation workflows, enhancing the robustness of the flows, and bringing them up to IL-4 Design Acceleration and Transition: Continue to accelerate DoD access to a microelectronics evidence-based assurance design and manufacturing ecosystem leveraging commercial capabilities for long-term sustainability. The following activities could be included: • Establish activities with Design Acceleration Centers to leverage commercial intellectual property (IP), electronic design automation (EDA), and processes enabling prototype transition acceleration • Continue to develop and evaluate IP for application-specific integrated circuit (ASIC) and Chiplet security including authentication, Firmware Attestation and Decryption and system-on-chip (SOC) Interface encryption. • Continue to develop, evaluate, and insert tools and techniques to protect silicon IP during manufacturing and test phase, including multi- chip package (MCP) with full lifecycle evidence-based assurance demonstration and maturation. • Continue demonstration of using commercial off-the-shelf (COTS) parts in more critical DoD applications utilizing evidence-based the inherent personalization features of the COTS device. • Continue to accelerate the development and evaluation of secure ASIC design for DoD unique applications. • Transition the Rapid Assured Microelectronics Prototypes (RAMP) prototype capability to enhance secure design and cloud capability with new tools/techniques to the joint Office of Under Secretary of Defense for Research and Engineering and Office of Under Secretary of Defense for Acquisition and Sustainment's Design to Transition Accelerator (D2TA) operational capability. ***FY 2025 Plans:*** Foundry Access: • Continue to enhance access to state-of-the-art (SOTA) fabrication ecosystem. • Maintain program of record access to assured fabrication flow and fund multi-project wafer production runs at multiple SOTA domestic sources. RAMP-C:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
A leading edge (<7 nanometer), commercially-viable, U.S.-located domestic wafer foundry ecosystem access is established. The ecosystem will have capability on the order of > 26,000 wafer starts per month for design and manufacturing of evidence-based assured, dual-use commercial and DoD custom integrated circuits. This project will enable the following: • Access, meaning the ability for DoD programs and the defense industrial base to purchase parts and devices with the necessary assurance, to a SOTA U.S. wafer foundry, to commercial and critical evidence-based assured dual-use COTS integrated circuits, and to capabilities necessary to develop evidence-based assured custom DoD integrated circuits. • The jump-start in commercial use of the domestic foundry by key U.S. fabless companies. • Establishment of a viable design ecosystem including access to 3rd party design modules. • The reduction in the cost differential of building a U.S.-located wafer foundry verses off-shore. • The enablement of commercially-supported and enduring U.S. logic foundry capability. • Leverage the expertise of commercial industry to develop and demonstrate novel capabilities for design of State-of-the Art (SOTA) with assurance. Cloud/Electronic Design Automation (EDA): • Continue activities for prototype demonstration of an emulation based evidence-based assurance design flows • Continue efforts to raise the technology readiness level (TRL) of pilot emulation efforts to production readiness by standardizing the cloud-based emulation workflows, enhancing the robustness of the flows, and bringing them up to IL-4 Design Acceleration and Transition: • Continue activities with Design Acceleration Centers to leverage commercial intellectual property (IP), EDA, and processes enabling prototype transition acceleration • Continue to expand and accelerate development and evaluation and initiate insertion of IP for application-specific integrated circuit (ASIC) and Chiplet security including authentication, Firmware Attestation and Decryption and system-on-chip (SOC) Interface encryption. • Continue to develop and evaluate, and initiate insertion of, tools and techniques for Protect of silicon IP during manufacturing and test phase, including multi-chip package (MCP). • Continue development of using commercial off-the-shelf (COTS) parts in more critical DoD applications utilizing the inherent personalization features ***FY 2024 to FY 2025 Increase/Decrease Statement:*** A decrease of $50M in FY 2024 due to approved Errata. Revised Plan is for FY 2024 $261.120M but $311.120.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The decrease of -$94.053 million is due to a realignment of -$4.306 million to the Mission Engineering and Integration (ME&I) Program Element 0603142D8Z, a realignment of -$1.122 million to the Defense Innovation Acceleration (DIA) Program Element 0603838D8Z. The remaining reduction of -$88.625 million is due to a planned reduction due to the maturation of activities on the RAMP and RAMP-C projects.			
Accomplishments/Planned Programs Subtotals	262.818	311.120	160.435

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Funding increase of $.324 million in FY 2025

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Access to SOTA Microelectronics - Development	MIPR	Defense Advanced Research Projects Agency, Air Force, Army, Navy, National Security Agency : Various	1,884.670	262.818	Mar 2023	311.120	Mar 2024	160.435	Mar 2025	-		160.435	Continuing	Continuing	-
		Subtotal	1,884.670	262.818		311.120		160.435		-		160.435	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) Funding increase of $.324 million FY 2025, ($1.557 million FY 2025-2029) for Economic Assumptions

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,884.670	262.818		311.120		160.435		-		160.435	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) Funding increase of $.324 million FY 2025, ($1.557 million FY 2025-2029) for Economic Assumptions

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

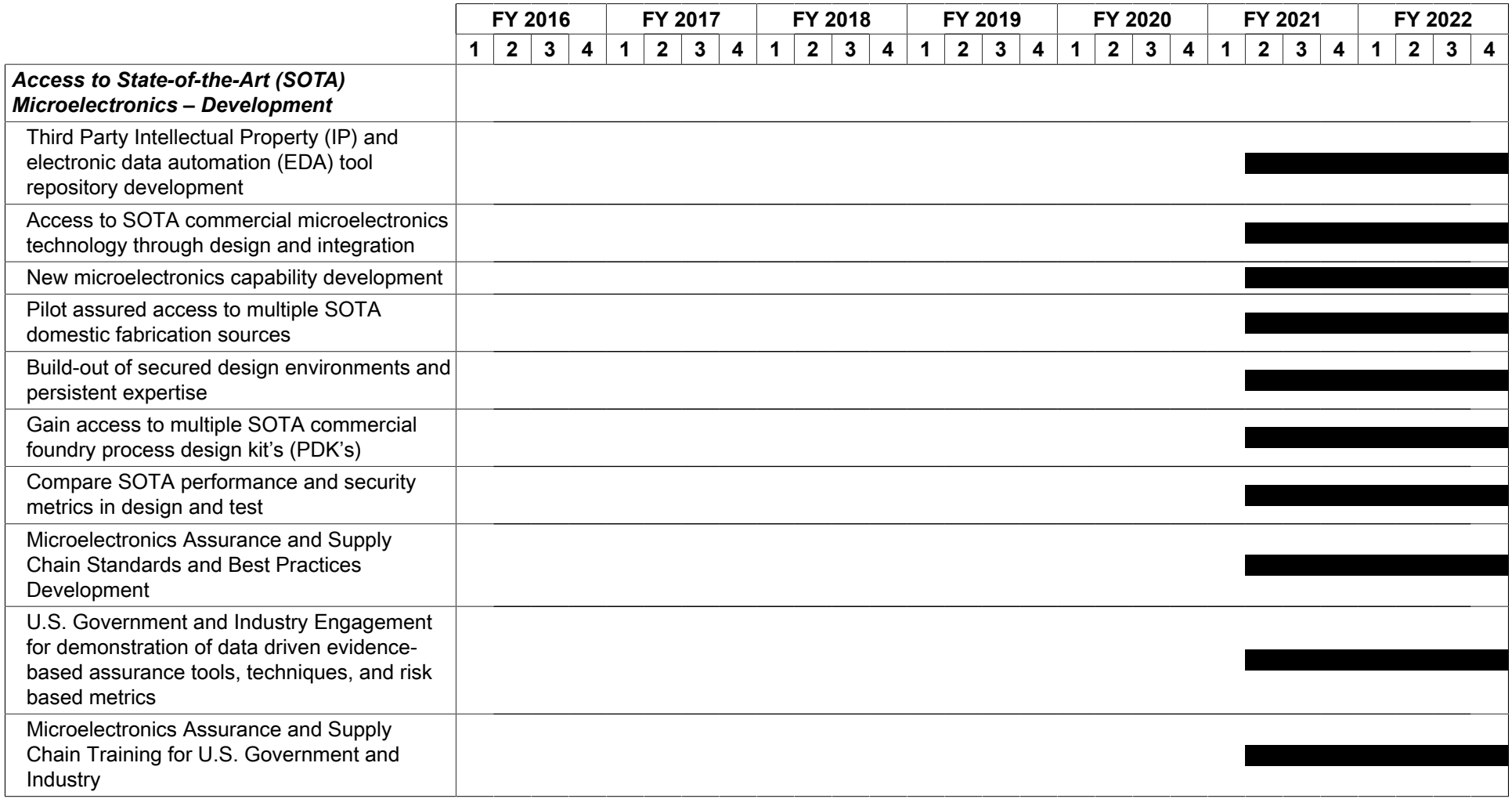
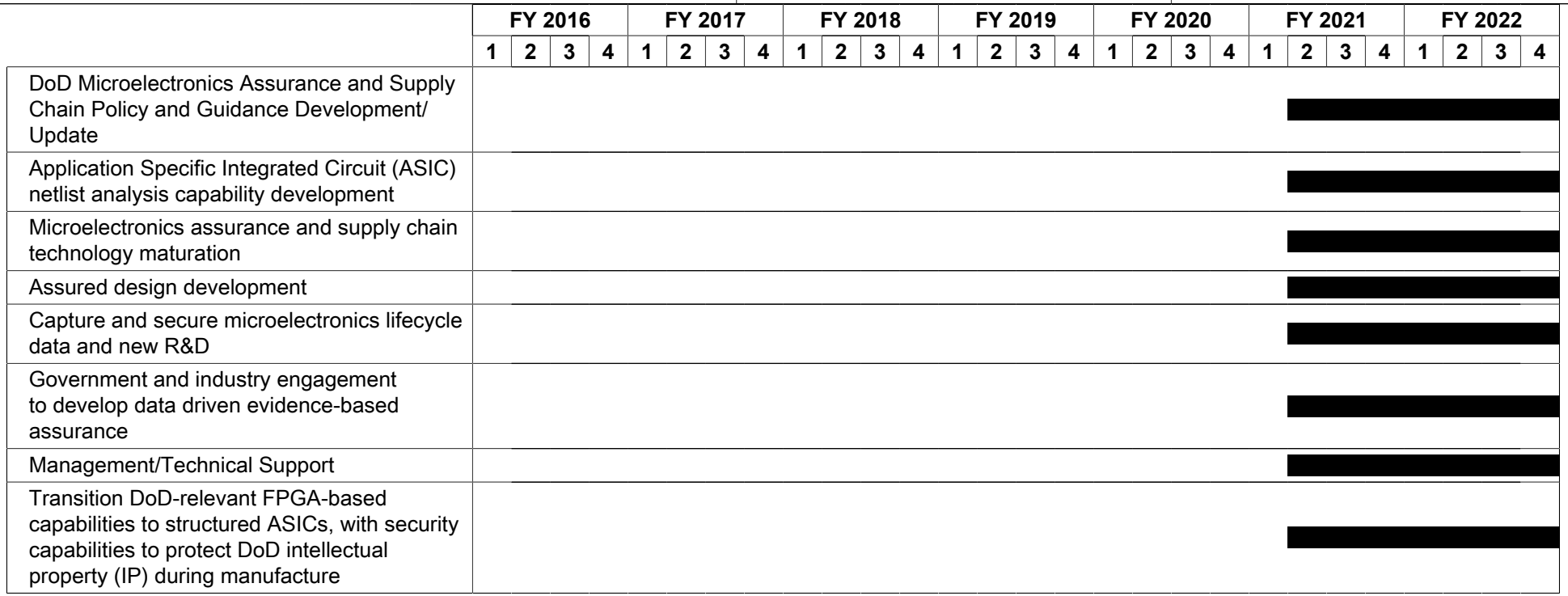


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*



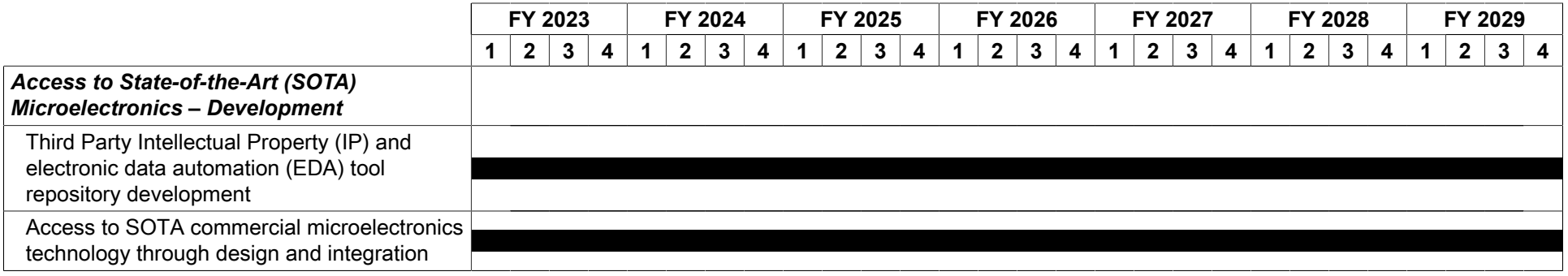


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

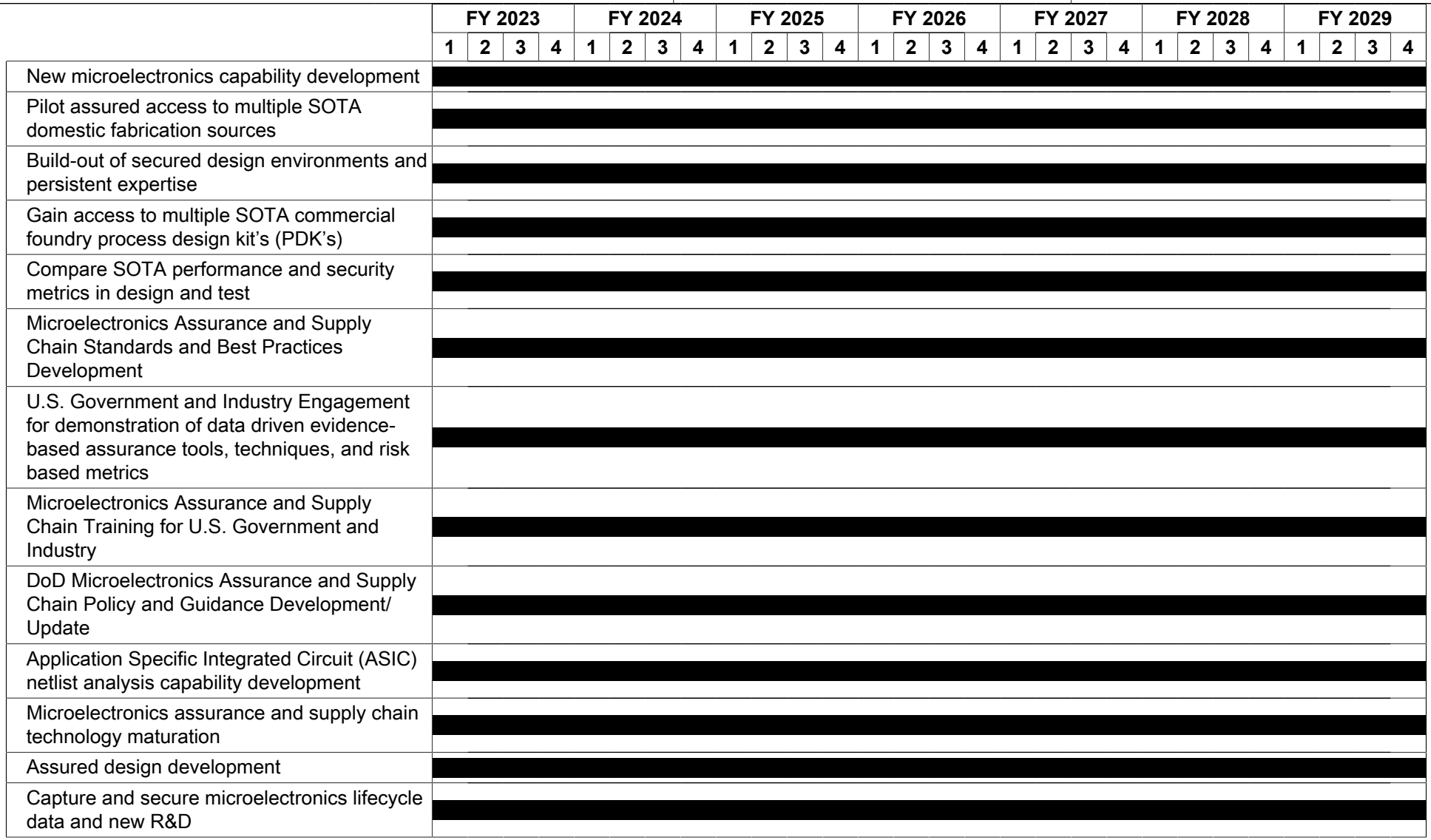


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

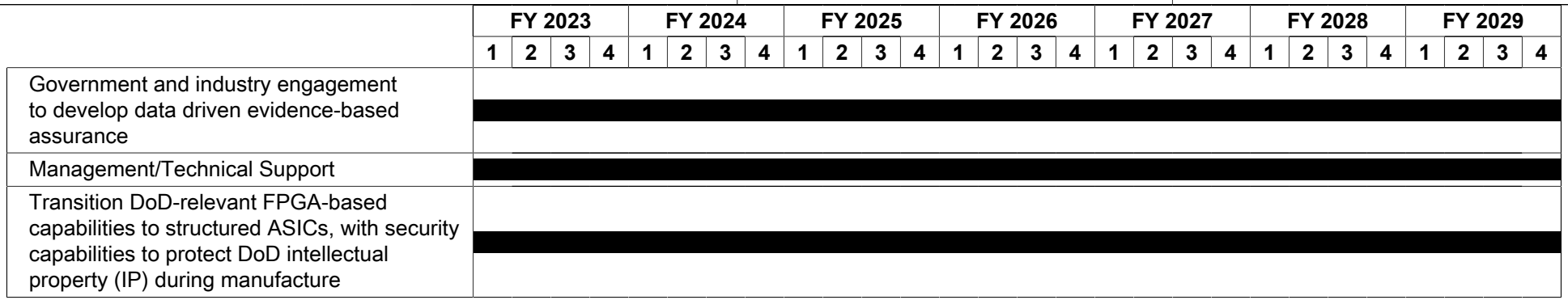


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Access to State-of-the-Art (SOTA) Microelectronics – Development				
Third Party Intellectual Property (IP) and electronic data automation (EDA) tool repository development	2	2021	4	2029
Access to SOTA commercial microelectronics technology through design and integration	2	2021	4	2029
New microelectronics capability development	2	2021	4	2029
Pilot assured access to multiple SOTA domestic fabrication sources	2	2021	4	2029
Build-out of secured design environments and persistent expertise	2	2021	4	2029
Gain access to multiple SOTA commercial foundry process design kit's (PDK's)	2	2021	4	2029
Compare SOTA performance and security metrics in design and test	2	2021	4	2029
Microelectronics Assurance and Supply Chain Standards and Best Practices Development	2	2021	4	2029
U.S. Government and Industry Engagement for demonstration of data driven evidence-based assurance tools, techniques, and risk based metrics	2	2021	4	2029
Microelectronics Assurance and Supply Chain Training for U.S. Government and Industry	2	2021	4	2029
DoD Microelectronics Assurance and Supply Chain Policy and Guidance Development/Update	2	2021	4	2029
Application Specific Integrated Circuit (ASIC) netlist analysis capability development	2	2021	4	2029
Microelectronics assurance and supply chain technology maturation	2	2021	4	2029
Assured design development	2	2021	4	2029
Capture and secure microelectronics lifecycle data and new R&D	2	2021	4	2029
Government and industry engagement to develop data driven evidence-based assurance	2	2021	4	2029

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 907 / *Access to State-of-the-Art (SOTA) Microelectronics - Development*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Management/Technical Support	2	2021	4	2029
Transition DoD-relevant FPGA-based capabilities to structured ASICs, with security capabilities to protect DoD intellectual property (IP) during manufacture	2	2021	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604294D8Z / *Trusted and Assured Microelectronics*	Project (Number/Name) 908 / *Access to Advanced Packaging and Testing - Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
908: *Access to Advanced Packaging and Testing - Development*	153.781	68.221	90.199	92.404	-	92.404	91.055	63.751	65.278	66.700	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project will leverage existing commercially available expertise and capability to deliver self-sustaining digital and Radio Frequency (RF) state-of-the-art (SOTA) heterogeneous integrated packaging (SHIP), assembly, and test capability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Access to Advanced Packaging and Testing - Development	68.221	90.199	92.404

Description: This project will leverage heterogeneous integrated (HI) packaging technologies to accelerate adoption of the most advanced microelectronics available. Key technologies, processes and tools will be developed and improved upon, allowing DoD to utilize HI technologies to package chips and chiplets (small specialized die) to realize performance benefits. Working with world-class industrial partners will provide early access to proprietary information related to these technologies, giving DoD an asymmetrical advantage.

This project will deliver an on-shore microelectronic device package design, assembly, and test capability. It will provide access to dual-use SOTA heterogeneous packaged microelectronics and manufacturing processes. It will enable
Description: This project will utilize Description: This project will utilize Description: This project will leverage heterogeneous integrated (HI) packaging technologies to accelerate adoption of the most advanced microelectronics available. Key technologies, processes and tools will be developed and improved upon, allowing DoD to utilize HI technologies to package chips and chiplets (small specialized die) to realize performance benefits. Working with world-class industrial partners will provide early access to proprietary information related to these technologies, giving DoD an asymmetrical advantage.

This project will deliver an on-shore microelectronic device package design, assembly, and test capability. It will provide access to dual-use SOTA heterogeneous packaged microelectronics and manufacturing processes. It will enable personalization of, and customization for supporting DoD programs. It will enable a revolutionary leap in system performance that will greatly reduce size, weight and power (SWaP) by incorporating the immense advances in SOTA commercial off the shelf (COTS) processing technologies, such as field programmable gate arrays (FPGAs), microprocessors, and Graphic Processing Units (GPUs).

FY 2024 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 908 / *Access to Advanced Packaging and Testing - Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue the establishment of a state-of-the-art (SOTA) packaging and test facility capable of packaging, testing and personalization of integrated circuits in which the fully assembled and operationally functional multi-chip package (MCP) can contain International Traffic in Arms Regulations (ITAR) regulated and/or classified information. Continue to expand and accelerate development: • Continue to collaborate with the Defense Industrial Base for prototype design requirements and device transition planning. • Continue Implementation of post-assembly personalization and operational test capabilities. • Continue to Implement MCP finish capability for additional security to protect DoD specific intellectual property (IP) and critical program information (CPI) in the fully functional MCP. • Continue to accelerate access. • Continue to Enable re-shoring mature manufacturing, assembly, and test from commercial product lines such as high-volume flip-chip capabilities. • Continue to enable access to advanced radio frequency (RF) packages by providing a full suite of design tools, advanced packaging platforms, and a wide selection of material choices. • Continue to Accelerate defense industrial base (DIB) and DoD maturation leveraging commercial design using developed process design kits (PDKs) and assembly design kits (ADKs) to design custom devices. • Continue to Accelerate DoD access to SOTA MCP products utilizing commercial packaging, assembly, and test. • Continue to create a catalog of designs, die, chiplets, package types, etc. • Continue to Ensure Reuse and Standardization for sustainability and costs. • Continue to Accelerate and expand adoption & Use in military systems to design, packaging, and assembly as a service. • Continue to enhance secure design and packaging capability with new tools/techniques. • Continued development of secure, accessible, and cost effective SOTA heterogeneous integration (HI) design, assembly and test capability. • Continue to develop Advanced HI Prototype Platforms for Productization and Qualification test. • Continue to develop, and initiate qualifications of, packaging processes that source materials from domestic microelectronics ecosystem. • Continue to prototype microelectronics evidence-based assurance guidance for microelectronics heterogeneous integrated packaging. • Mature readiness of advanced HI packaging processes for initial production capability.			
FY 2025 Plans: Continue the establishment of, and accelerate access to, SOTA packaging and test facilities capable of packaging, testing and personalization of integrated circuits in which the fully assembled and operationally functional Multi-Chip Package (MCP) can contain ITAR regulated and/or classified information. Continue to ensure reuse and standardization for sustainability and			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 908 / *Access to Advanced Packaging and Testing - Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
costs. Continue executing transition strategy through engagement with programs offices and DIB, data driven analyses, and risk reduction. Continue to expand and accelerate the development of: • Advanced packaging capability utilizing re-shored commercial manufacturing, assembly, domestically sourced materials, and test for productization and qualification. • Processes and capabilities to meet DoD's heterogeneous integration (HI) packaging unique design needs • Advanced radio frequency (RF) packaging design tools, process design kits (PDKs), assembly design kits (ADKs), and platforms using a wide selection of material choices. • A catalog of designs, die, chiplets, package types, etc. • Prototyping microelectronics evidence-based assurance guidance for microelectronics heterogeneous integrated packaging • Enhance secure design and packaging capability with new tools/techniques. • Post-assembly personalization and operational test capabilities. • MCP finish capability for additional security to protect DoD specific intellectual property (IP) and critical program information (CPI) in the fully functional MCP. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $2.018 million between FY 2024 and FY 2025 will mature readiness for initial production in an on-shore microelectronic device package design, assembly, and test capability, providing access to dual use state-of-the-art (SOTA) heterogeneous packaged microelectronics and manufacturing processes and enabling customization for supporting DoD programs.			
Accomplishments/Planned Programs Subtotals	68.221	90.199	92.404

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Funding increase of $.187 million FY 2025

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 908 / *Access to Advanced Packaging and Testing - Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Access to Advanced Packaging and Testing - Development	MIPR	Defense Advanced Research Projects Agency, Air Force, Army, Navy, National Security Agency : Various	153.781	68.221	Mar 2023	90.199	Mar 2024	92.404	Mar 2025	-		92.404	Continuing	Continuing	-
		Subtotal	153.781	68.221		90.199		92.404		-		92.404	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) Funding increase of $.187 million FY- 2025 for Economic Assumptions

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	153.781	68.221		90.199		92.404		-		92.404	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) Funding increase of $.187 million FY 2025 for Economic Assumptions

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 908 / *Access to Advanced Packaging and Testing - Development*

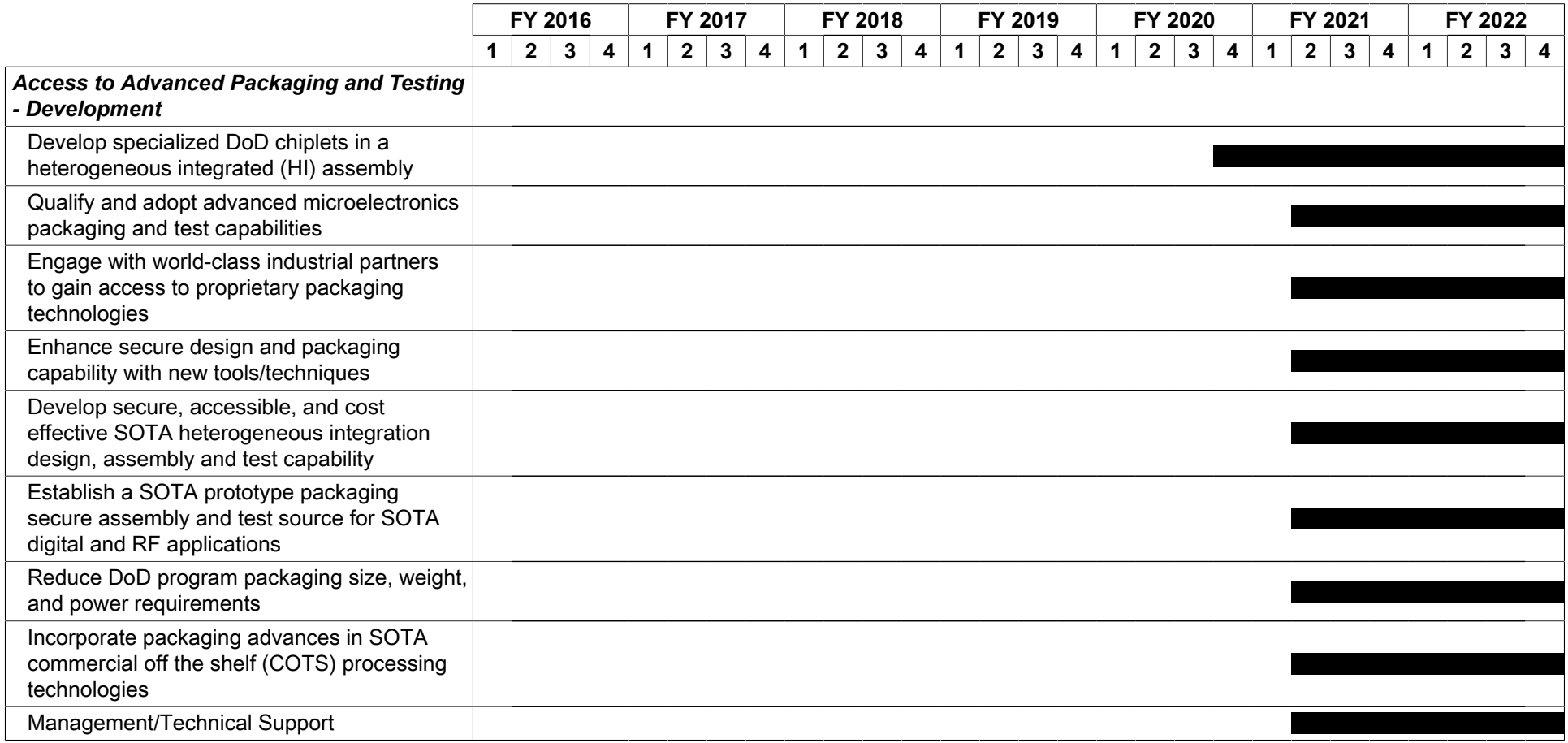


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 908 / *Access to Advanced Packaging and Testing - Development*

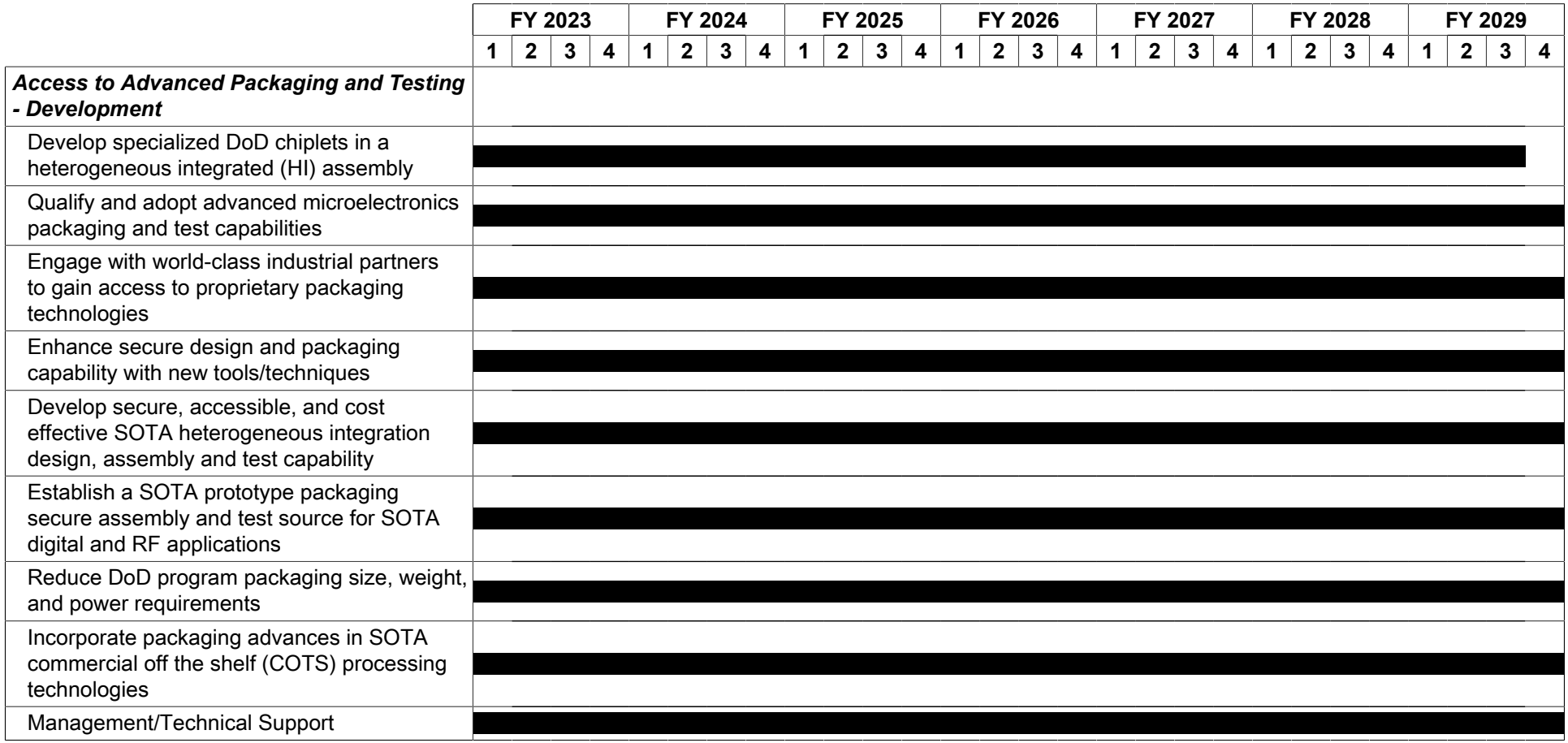


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 908 / *Access to Advanced Packaging and Testing - Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Access to Advanced Packaging and Testing - Development				
Develop specialized DoD chiplets in a heterogeneous integrated (HI) assembly	4	2020	3	2029
Qualify and adopt advanced microelectronics packaging and test capabilities	2	2021	4	2029
Engage with world-class industrial partners to gain access to proprietary packaging technologies	2	2021	4	2029
Enhance secure design and packaging capability with new tools/techniques	2	2021	4	2029
Develop secure, accessible, and cost effective SOTA heterogeneous integration design, assembly and test capability	2	2021	4	2029
Establish a SOTA prototype packaging secure assembly and test source for SOTA digital and RF applications	2	2021	4	2029
Reduce DoD program packaging size, weight, and power requirements	2	2021	4	2029
Incorporate packaging advances in SOTA commercial off the shelf (COTS) processing technologies	2	2021	4	2029
Management/Technical Support	2	2021	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604294D8Z / *Trusted and Assured Microelectronics*	Project (Number/Name) 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
911: *Access to Radiation Hardened RF and Opto-Electronic Development*	219.572	196.908	279.416	210.076	-	210.076	151.674	124.347	124.058	126.762	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project addresses the dual problems of commanding only a small market share while requiring an expansive range of unique microelectronics needs, from boutique and legacy components to state-of-the-art (SOTA) technologies. The Government must sustain specialty suppliers, given their criticality to national security. In particular, DoD needs access to a diverse microelectronics ecosystem to develop and acquire the application specific integrated circuits (ASICs) and personalized commercial off the shelf (COTS) components required for military radiation hardened and radio frequency (RF) and optoelectronic (OE) needs.

The Department frequently relies on commercial suppliers to optimize performance and reduce costs for sophisticated weapon system and secure network functionality. It is critical that DoD has reliable access to subject matter expertise, technology, and manufacturing.

In addition to radiation hardened microelectronics needs, the DoD requires access to RF and opto-electronic materials, foundries, and packaging facilities, in order to enable next generation sensors and communications. The DoD must leverage state-of-the-art microelectronic technologies driven by mega-trends such as 5G wireless and datacenters in order to combat emerging threats and deliver overmatch technology to the warfighter. At the same time, the DoD must fill the gaps which are left unaddressed by these dual-use mega-trends to satisfy mission requirements. By partnering in the maturation of state-of-the-art material sources, foundries, and packaging facilities, the DoD is able to develop the ability to tailor the dual use technology towards unique DoD applications and encourage open access design, which stimulates innovation and drives affordability. Additionally, critical investments must be made in the domestic supply chains supporting both RF Gallium Nitride (GaN) and integrated photonics in order to maintain the integrity and security of the Defense Industrial Base.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Access to Radiation Hardened-, RF-, and Opto-Electronic Development	120.408	279.416	210.076
Description: Government-unique trusted design and manufacturing flows have been developed to enable a tier of trust for select ASIC parts; however, this approach addresses only a small subset of DoD microelectronics requirements (e.g., processors, memory, microcontrollers, field programmable gate arrays (FPGAs), and radiation-tolerant processors). DoD will partner with the intelligence community, the Department of Energy, and the National Aeronautics and Space Administration to develop radiation hardened components that permit systems to operate in space and other harsh environments. state-of-the-practice (SOTP) and state-of-the-art (SOTA) technologies will be characterized and developed in support of Radiation Hardened By Process (RHBP) and Radiation Hardened By Design (RHBD) activities in support DoD modernization programs with radiation hardened requirements.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Beyond complementary metal-oxide semiconductor (CMOS) and radiation hardened microelectronics, radio frequency (RF)- and opto-electronic (RF/OE) technologies represent critically enable asymmetric DoD capabilities as well as domestic dual-use industrial base capabilities. RF/OE investments will develop and demonstrate RF Gallium Nitride (GaN) and integrated photonic material sources, foundries, packaging facilities. These investments will break microelectronics bottlenecks which directly enable compact millimeter wave transceivers and artificial intelligence training for edge compute. ***FY 2024 Plans:*** Planned activities are as follows: • Continue development of RHBD techniques in SOTA technologies with validated radiation aware PDKs and radiation hardened cell libraries • Transition developed RH technologies into space and strategic programs. • Continue to mature multiple manufacturing readiness level (MRL)-6 state-of-the-art RF GaN foundries offering open access to millimeter wave device design and advanced interconnect services, progressing toward MRL-7 • Continue to mature MRL-6 multiple co-packaged optical chiplets and multi-chip packages offering high-bandwidth data transfer capabilities. • Continue to mature MRL-6 advanced semiconductor material production and baseline for insertion into multiple millimeter wave foundries. • Establish workforce development program for RF, power, and photonics. • Demonstrate access to state-of-the-art RF GaN and integrated photonic foundries via advanced prototype demonstrators. • Continue to mature RHBP techniques in a state-of-the-practice (SOTP) foundry. • Increase capacity for RHBD technologies to support additional DoD programs. • Add second contractor to development effort for a strategic radiation-hardened Field Programmable Gate Array (FPGA) capability for DoD • Increase funding for Government Radiation Hardened System-on-a- Chip (GRADSoC) Phases 2 and 3 • Demonstrate design and process capability with radiation hard by design tested chip, TRL-6. • Two new sources of radiation hard by design enabling onboard processing capability with 100x capability improvement. • Maintain a mature portfolio of domestic RF GaN foundries, which offers open access to millimeter wave technology and product transition via the DoD Advanced Packaging ecosystem. • Demonstrate advanced integrated photonics prototypes via secure access to state-of-the-art domestic foundries. • Initiate development of next generation RF GaN power technologies to increase RF power efficiency and dramatically improve thermal efficiency and management, decreasing the power load on DoD platforms.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Initiate development of next generation radio frequency (RF) Gallium Nitride (GaN) prototypes with improved performance at an affordable cost for drop in Line Replaceable Units (LRUs) in existing systems potentially without major architectural and structural redesign. • Leverage commercial developments in next generation RF GaN power technologies to adapt for DoD applications. • Initiate effort to transition emerging memory architectures for artificial intelligence (AI) applications, benefiting existing Programs of Record and emerging DoD electronics systems. • Develop emerging memory architectures for future DoD edge applications for AI, with more severe power constraints as AI models grow in size and the need for rapid response means always-on is required. • Develop a two level memory (2LM) system where weights are stored in persistent memory to substantially reduce leakage power and allow larger AI models. • Initiate development of a custom intelligent data cache to enable rapid innovation for DoD workloads, freed from the memory access assumptions driven by the commercial market. • Initiate development of high voltage silicon carbide (SiC) technology for dense power delivery and high power (high voltage & high current) devices in ultra-compact, reliable, and efficient form factors. Successful development of this technology will enable improvements in output & efficiency (better power conversion with less loss for use in ship-to-shore power, DC transmission, and other integrated power systems), speed (reducing charging time for vehicles, aircraft, and other platforms from hours to minutes), and size (reducing size of high-voltage converters, drives and substations to a fraction of current volumes). • Develop capability to deliver of thick epitaxial SiC wafers at scale to enable high voltage, high current device development. • Research techniques to optimize advanced packaging design and testing for high power SiC technology. • Lay groundwork for device integration of high power SiC technology, including working with application and platform developers to integrate into higher level assemblies and mission-critical systems that require robust, energy-dense solid state power switching solutions. Continued characterization, development, and demonstration of space and strategic radiation hard microelectronics technology in support of DoD modernization efforts. These investments fund projects in the following rad hard technology areas: radiation hardened by process (RHBP) and radiation hardened by design (RHBD) to support space and strategic ASIC requirements, standalone radiation hardened components for cross -service common parts needs, as well as lab modernization in support independent validation and verification of rad hard technology. ***FY 2025 Plans:*** Planned activities are as follows: • Continue to mature multiple MRL-7 state-of-the-art RF GaN foundries offering open access to millimeter wave device design and advanced interconnect services.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Continue to mature MRL-6 multiple co-packaged optical chiplets and multi-chip packages offering high-bandwidth data transfer capabilities. • Continue to mature manufacturing readiness level (MRL)-6 advanced semiconductor material production and baseline for insertion into multiple millimeter wave foundries. • Continue workforce development program for radio frequency (RF), power, and photonics. • Continue development of next generation RF Gallium Nitride (GaN) power technologies to increase RF power efficiency and dramatically improve thermal efficiency and management, decreasing the power load on DoD platforms. • Continue development of next generation RF GaN prototypes with improved performance at an affordable cost for drop in Line Replaceable Units (LRUs) in existing systems potentially without major architectural and structural redesign. Leverage commercial developments in next generation RF GaN power technologies to adapt for DoD applications. • Continue development of radiation hardened by design (RHBD) techniques in state-of-the-art (SOTA) technologies with validated radiation aware process design kits (PDKs) and radiation hardened cell libraries • Transition developed radiation hardened technologies into space and strategic programs. Initiate effort to transition emerging memory architectures for artificial intelligence (AI) applications, benefiting existing Programs of Record and emerging DoD electronics systems. • Develop emerging memory architectures for future DoD edge applications for AI, with more severe power constraints as AI models grow in size and the need for rapid response means always-on is required. • Continued characterization, development, and demonstration of space and strategic radiation hard microelectronics technology in support of DoD modernization efforts. These radiation hardened investments fund projects in the following rad hard technology areas: radiation hardened by process (RHBP) RHBD to support space and strategic application-specific integrated circuit (ASIC) requirements, standalone radiation hardened components for cross-service common parts needs, as well as lab modernization in support independent validation and verification of rad hard technology. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $69.763 million between FY 2024 and FY 2025 is the net result of a realignment of $89.106 million to the Mission Engineering and Integration (ME&I) PE 0603142D8Z that will support efforts to integrate data, tools, and techniques to speed delivery of capabilities to the warfighter, which is Building on our Enduring Advantages, a key goal of the National Defense Strategy, and a previously planned increase of $19.343 million.			
Accomplishments/Planned Programs Subtotals	120.408	279.416	210.076

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*

	FY 2023	FY 2024
Congressional Add: GaN and GaAs RFIC technology ***FY 2023 Accomplishments:*** • Continued production demonstration of state-of-the-art (SOTA) radio frequency (RF) Gallium Nitride (GaN) devices and advanced interconnect components in a production relevant environment. • Continued demonstration of millimeter wave device designs/IP via open access to SOTA RF GaN nodes.	25.000	-
Congressional Add: Radiation-Hardened Fully-Depleted Silicon-on-Insulator Microelectronics ***FY 2023 Accomplishments:*** Complementary Metal Oxide Semiconductor (CMOS) Silicon On Insulator (SOI) technology maturation, demonstration, and qualification for use in Department of Defense Space and Strategic system applications to include radiation aware Process Development Kits (PDKs), radiation hardened cell libraries, device and circuit modeling and simulation, hardware demonstration and environmental test in DoD relevant radiation environments.	38.000	-
Congressional Add: Advanced Node Radiation-Hardened Fully-Depleted Silicon-on-Insulator Technology ***FY 2023 Accomplishments:*** Advanced Complementary Metal Oxide Semiconductor (CMOS) Silicon On Insulator (SOI) research and development, technology maturation, and prototype demonstration for use in Department of Defense Space and Strategic system applications to include radiation aware Process Development Kits (PDKs), radiation hardened cell libraries, device and circuit modeling and simulation, hardware demonstration and environmental test in DoD relevant environments. Demonstrations to include use of advanced commercial CMOS SOI technology for use in hardened configurable logic and system in package prototypes. Development of design intellectual property (IP) generation models for critical semiconductor industrial base sustainment and growth, IP affordability, and asymmetric advantage for the DoD.	10.000	-
Congressional Add: Magnetoresistive Random Access Memory (MRAM) ***FY 2023 Accomplishments:*** Magnetoresistive random access memory (or MRAM) technology has several aspects that make it attractive for DoD use, including a high inherent tolerance to radiation and nearly unlimited read and write endurance. Activities included: • Fostering industrial competition of this technology • Accelerating ongoing development activities for MRAM, with a goal of creating more advanced and capable memory technology than is currently available.	3.500	-
Congressional Adds Subtotals	76.500	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) Funding increase of $.423 million FY 2025, ($2.035 million FY 2025-2029) for Economic Assumptions.

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Address DoD Unique Needs - Development	MIPR	Defense Advanced Research Projects Agency, Air Force, Army, Navy, National Security Agency : Various	219.572	196.908	Mar 2023	279.416	Mar 2024	210.076	Mar 2025	-		210.076	Continuing	Continuing	-
		Subtotal	219.572	196.908		279.416		210.076		-		210.076	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) Funding increase of $.423 million FY 2025 for Economic Assumptions.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	219.572	196.908		279.416		210.076		-		210.076	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) Funding increase of $.423 million FY 2025 for Economic Assumptions.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*

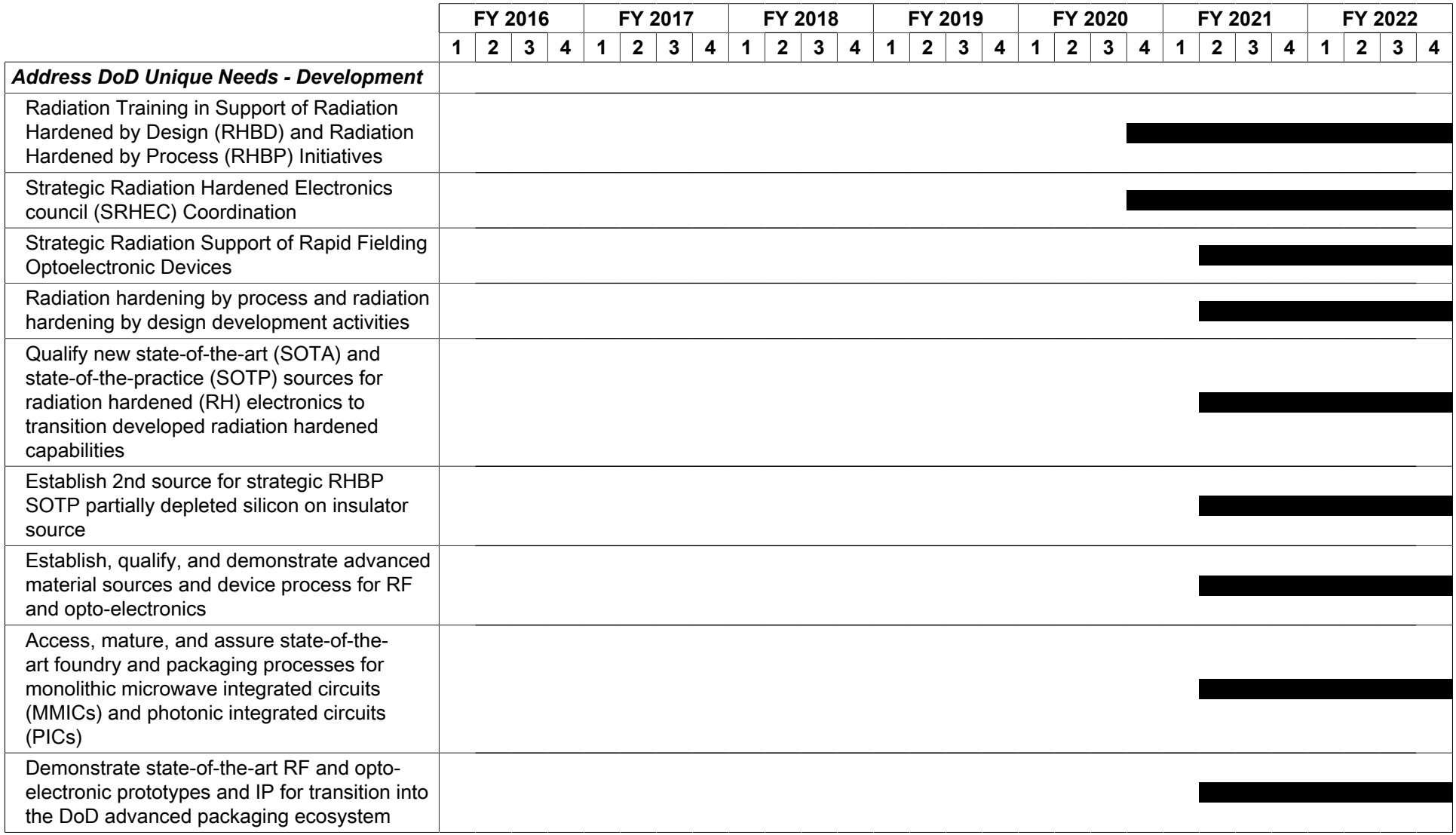


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Micr oelectronics*	**Project (Number/Name)** 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*

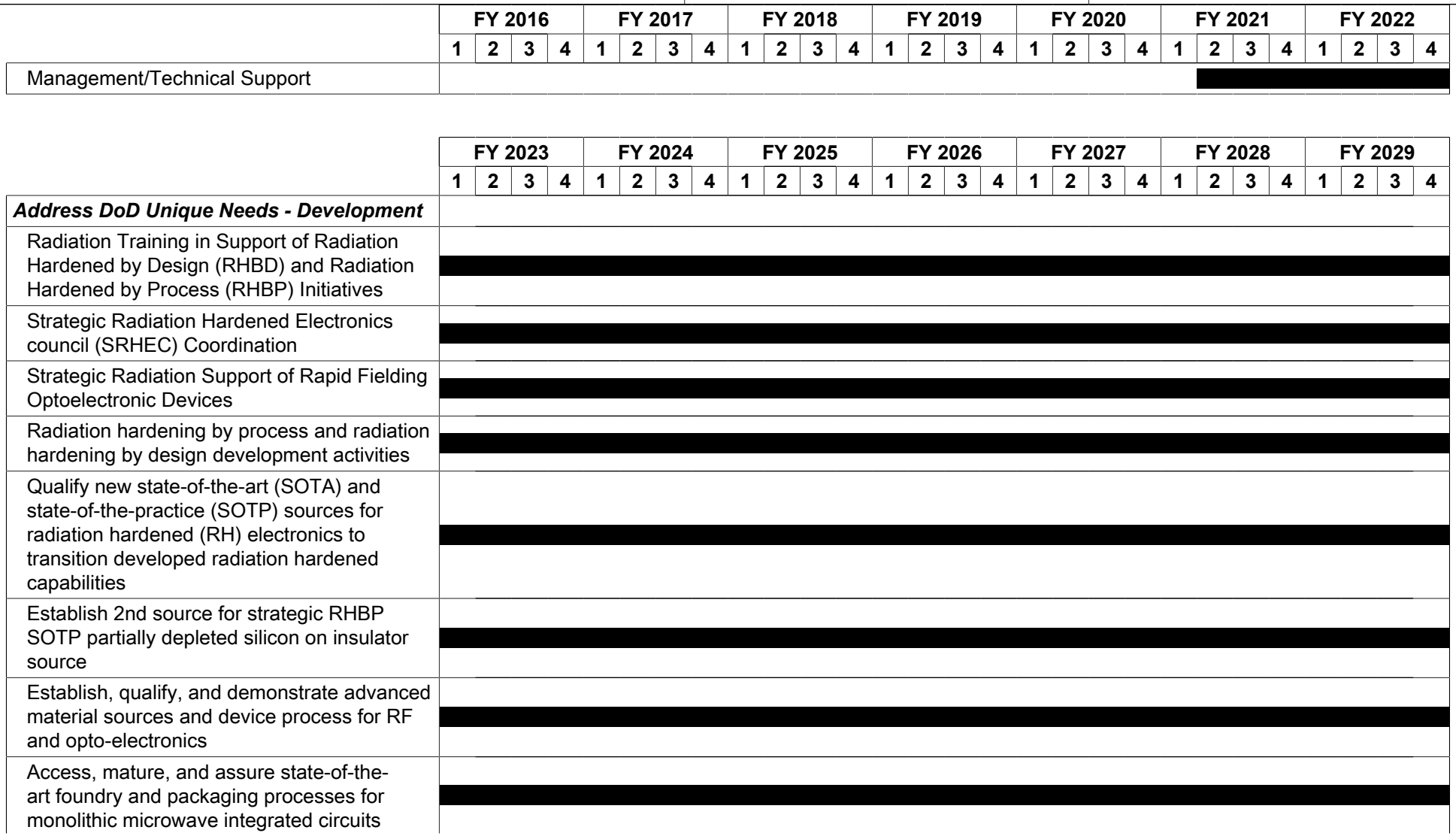


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(MMICs) and photonic integrated circuits (PICs)																												
Demonstrate state-of-the-art RF and opto-electronic prototypes and IP for transition into the DoD advanced packaging ecosystem																												
Management/Technical Support																												

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 911 / *Access to Radiation Hardened RF and Opto-Electronic Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Address DoD Unique Needs - Development				
Radiation Training in Support of Radiation Hardened by Design (RHBD) and Radiation Hardened by Process (RHBP) Initiatives	4	2020	4	2029
Strategic Radiation Hardened Electronics council (SRHEC) Coordination	4	2020	4	2029
Strategic Radiation Support of Rapid Fielding Optoelectronic Devices	2	2021	4	2029
Radiation hardening by process and radiation hardening by design development activities	2	2021	4	2029
Qualify new state-of-the-art (SOTA) and state-of-the-practice (SOTP) sources for radiation hardened (RH) electronics to transition developed radiation hardened capabilities	2	2021	4	2029
Establish 2nd source for strategic RHBP SOTP partially depleted silicon on insulator source	2	2021	4	2029
Establish, qualify, and demonstrate advanced material sources and device process for RF and opto-electronics	2	2021	4	2029
Access, mature, and assure state-of-the-art foundry and packaging processes for monolithic microwave integrated circuits (MMICs) and photonic integrated circuits (PICs)	2	2021	4	2029
Demonstrate state-of-the-art RF and opto-electronic prototypes and IP for transition into the DoD advanced packaging ecosystem	2	2021	4	2029
Management/Technical Support	2	2021	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604294D8Z / *Trusted and Assured Microelectronics*	Project (Number/Name) 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
912: *Create an Evidence-Based Assured Microelectronics Pipeline*	112.544	92.401	126.081	130.694	-	130.694	129.107	110.420	88.759	90.745	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project will promote microelectronics innovation and create an evidence-based assured Microelectronics pipeline including continuing Joint Federated Assurance Center (JFAC) strategic partnerships, assuring field programmable gate array (FPGA) devices, supplier chain awareness and security, and workforce development. It will slow and in the long-term reverse offshoring trends by fostering commercial and Government alliances to preserve the U.S. ecosystem, lower barriers to innovation and adoption, strengthen workforce expertise, and ensure DoD has access to the next generation of advanced technology by utilizing an evidence-based assurance approach. This approach enables management of microelectronics security that is commensurate with program risk throughout the product pipeline and maintain the United States as the global source for high- end, secure, and reliable microelectronics components.

In addition, this project will develop a new data driven risk-based assurance paradigm for supply chain protection. This paradigm will strengthen security w3.5hile improving access, without exposing sensitive intellectual property (IP) to the foundry and requiring post-manufacture validation of foundry products. The enhancement will develop evidence-based assured design concepts in manufactured systems, enabling a formal risk-based approach to protection techniques. Manufactured microelectronics will be tested to ensure that IP protections meet or exceed current National Security Agency standards for IP protection, and to develop DoD's ability to detect certain malicious supply chain attacks on DoD microelectronics.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Create an Evidence-Based Assured Microelectronics Pipeline – Development	92.401	126.081	130.694
Description: DoD is investing in next-generation disruptive technology, leveraging U.S. innovation, and transitioning materials, architectures, and designs into prototype capabilities for use by multiple industrial sectors. This and additional targeted investments in workforce will begin to address long-term talent needs. In addition, the Department will continue to enhance its partnership with industry to mitigate supply chain risks. Significant increases in assurance and protection of DoD technical data and components will be achieved through improvements in design practices, modern commercial security practices, and advanced packaging and chain of custody technologies. This activity, along with continued engagements and partnerships with industry will foster necessary security features in commercial products and infrastructure that will facilitate long-term assured access for the U.S. Government to commercial advanced state-of-the-art (SOTA) technology providers.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
This project funds the operation hardware assurance (HwA) support to DoD programs and organizations of the Joint Federated Assurance Center (JFAC), established in National Defense Authorization Act (NDAA) Sec 937, to increase DoD's HwA by providing engineering tools, technical services, best practices, innovative technologies and other assistance to programs to detect, assess, prioritize, and mitigate vulnerabilities from hardware attacks and assurance against supply chain exploitation vulnerabilities. The JFAC will provide capabilities for programs to keep assessment findings throughout the life cycle of their systems for data mining (e.g., documentation on rationale for previous mitigation decisions). The collaboration between the JFAC and program offices will help mitigate existing and emerging critical threats and vulnerabilities in hardware available to all DoD programs. DoD is required to establish assured supply chain and operational security standards for the purchase of all (Commercial and Custom) microelectronics and protection of Intellectual Property across the entire lifecycle. An evidence-based assurance approach addresses FY 2020 NDAA Sec 224 requirement for trusted supply chain and operational security standards. Accelerate the adoption of an evidence-based assurance approach with multiple DoD pilot programs. This includes developing program guidance on baseline threats and mitigations per required level of assurance. This requires working closely with commercial industry, the defense industrial base and government JFAC subject matter experts. ***FY 2024 Plans:*** • Continue development of DoD program relevant application prototypes. • Cultivate a replicable and scalable Public-Private-Academic Partnership (PPAP) model to attract Science, Technology, Engineering, and Mathematics (STEM) students into trusted and assured microelectronics (T&AM) fields of study • Develop a clearable, knowledgeable workforce to support and execute DoD program workforce modernization needs in microelectronics • Obtain and Maintain an agile and adaptive workforce that meets current, as well as future, DoD needs • Stimulate rapid maturation and transition of emerging technologies and co-development with industry for assurance and security. • Continue development of industry outreach strategy to address critical technologies identified by DoD assurance and intelligence analysis. Sharing developed technical threat information with industry partners. • Expand HwA laboratory tools and capabilities to keep pace with emerging commercial developments • Increase funding for supply chain analysis and engagement with the U.S. Semiconductor industry to mitigate supply chain threats • Enable and accelerate maturation and adoption of an evidence-based assurance approach • Mature a regulatory and policy framework to enable long-term access to assured legacy and SOTA microelectronics. Extend access. Evaluate, mature, and improve assurance practices.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Ensure approach is aligned as part of DoD's comprehensive systems security engineering (SSE) framework. Trusted Systems and Networks (TSN) Analysis. Component level – FY 2020 NDAA Section 224 response for custom and commercial microelectronics. • Use pilot projects to mature threat driven risk-based decision making models. • Leverages existing efforts. DoD policy, guidance, threat identification efforts, analysis and response, mitigations, technical efforts. Commercial standards and best practices. Proactive Technology Analysis. • Supports breadth of DoD microelectronics. Custom – Custom Integrated Circuit (CIC) and Field Programmable Gate Array (FPGA). Commercial – Commercial Off The Shelf (COTS) and modified commercial components. • Provide engineering and foreign language expertise to the counterintelligence community to support collection, analysis, investigations, and operations related to the DoD and US Government supply chains and foreign intelligence entity (FIE) threats to semiconductor-related equities. • Develop the counterintelligence portal for semiconductor analysis and mitigations (CSPAM) tool to share raw and finished intelligence analysis, intelligence collection, and threat data relating to the semiconductor industry within the law enforcement, counterintelligence, and intelligence communities, as well as key government stakeholders. • Conduct a semiconductor familiarization training program for intelligence and counterintelligence personnel and integrate into their established research, development, and acquisition (RDA) training plans. • Perform foreign technology analysis of emerging technologies for the counterintelligence and intelligence communities, to determine semiconductor industry sub-sectors, companies, or technologies that might be the targets of FIE activities, and which foreign companies might be the beneficiaries of foreign targeting.			
FY 2025 Plans: • Continue development of DoD program relevant application prototypes. • Expand number of Joint Federated Assurance Center (JFAC) hardware assurance (HwA) labs that have capabilities which complement existing analytical services. • Conduct proactive Validations & Verification (V&V) on FPGA families • Provide technical and analytical support to Military Global Positioning System (GPS) User Equipment (MGUE) program. Level of support dependent on MGUE requirements. • Stimulate rapid maturation and transition of emerging technologies and co-development with industry for assurance and security. • Continue development of industry outreach strategy to address critical technologies identified by DoD assurance and intelligence analysis. Sharing developed technical threat information with industry partners.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Continue to provide engineering and foreign language expertise to the counterintelligence community to support collection, analysis, investigations, and operations related to the DoD and US Government supply chains and foreign intelligence entity (FIE) threats to semiconductor-related equities. • Continue development of the counterintelligence portal for semiconductor analysis and mitigations (CSPAM) tool to share raw and finished intelligence analysis, intelligence collection, and threat data relating to the semiconductor industry within the law enforcement, counterintelligence, and intelligence communities, as well as key government stakeholders. • Continue the semiconductor familiarization training program for intelligence and counterintelligence personnel and integrate into their established research, development, and acquisition (RDA) training plans. • Continue to perform foreign technology analysis of emerging technologies for the counterintelligence and intelligence communities, to determine semiconductor industry sub-sectors, companies, or technologies that might be the targets of FIE activities, and which foreign companies might be the beneficiaries of foreign targeting. • Expand hardware assurance (HwA) laboratory tools and capabilities to keep pace with emerging commercial developments • Continue conducting supply chain risk-analysis and engagements with the U.S. Semiconductor industry to mitigate supply chain threats • Enable and accelerate maturation and adoption of an evidence-based assurance approach • Mature a regulatory and policy framework to enable long-term access to assured legacy, State-of-the-Practice (SOTP), and SOTA microelectronics. This includes tasks to: Extend access, Evaluate, mature, and improve assurance practices. • Ensure evidence-based assurance approach is aligned with DoD's comprehensive systems security engineering (SSE) framework. This includes: Trusted Systems and Networks (TSN) Analysis and Component level – FY 2020 NDAA Section 224 response for custom and commercial microelectronics. • Use pilot projects to mature threat driven risk-based decision making models. • Leverage existing efforts, including DoD policy, guidance, threat identification efforts, analysis and response, mitigations, technical efforts, Commercial standards and best practices, and Proactive Technology Analysis. • Support breadth of DoD microelectronics, including Custom – Custom Integrated Circuit (CIC), Field Programmable Gate Array (FPGA), and Commercial – Commercial Off The Shelf (COTS) and modified commercial components. • Cultivate a replicable and scalable Public-Private-Academic Partnership (PPAP) model to attract Science, Technology, Engineering, and Mathematics (STEM) students into trusted and assured microelectronics (T&AM) fields of study Use outreach and curriculum guidance programs for K-12 education, STEM instruction at bachelor's degree and advanced degree levels, and continuing workforce training efforts to: • Develop a clearable, knowledgeable workforce to support and execute DoD program workforce modernization needs in microelectronics, and • Obtain and maintain an agile and adaptive workforce that meets current, as well as future, DoD needs			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The increase of $4.393 million between FY 2024 and FY 2025 will fund additional capacity for hardware verification and validation in DoD labs, supply chain analysis, and HwA efforts.			
Accomplishments/Planned Programs Subtotals	92.401	126.081	130.694

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Funding increase of $.264 million FY 2025 ($1.268 million FY 2025-2029) for Economic Assumptions.

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Create an Evidence-Based Assured Microelectronics Pipeline	MIPR	Defense Advanced Research Projects Agency, Air Force, Army, Navy, National Security Agency : Various	112.544	92.401	Mar 2023	126.081	Mar 2024	130.694	Mar 2025	-		130.694	Continuing	Continuing	-
		Subtotal	112.544	92.401		126.081		130.694		-		130.694	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers.
2) 2) Funding increase of $.264 million FY 2025 for Economic Assumptions.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	112.544	92.401		126.081		130.694		-		130.694	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

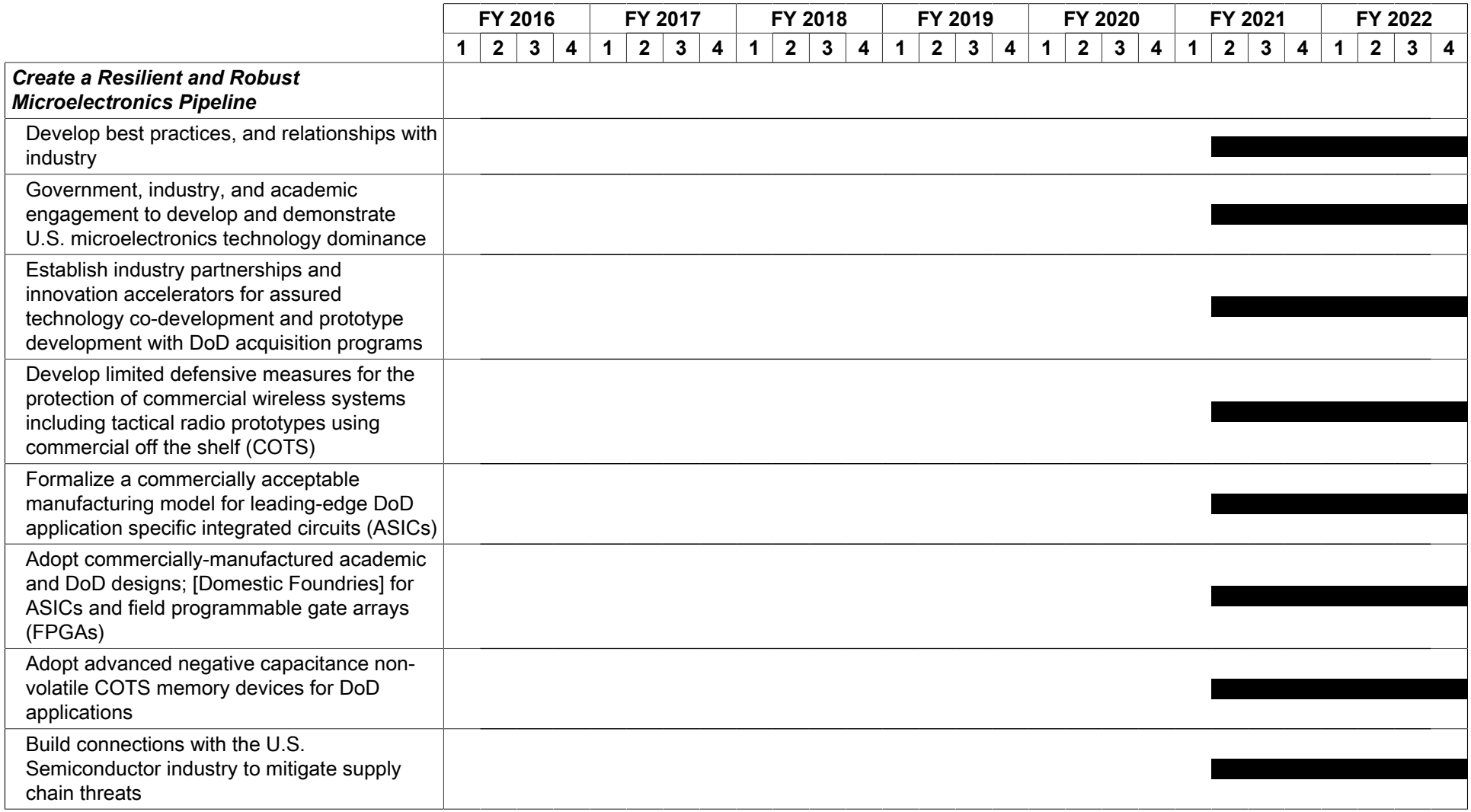


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Develop tools to analyze the health of the supply chain and track the health of the U.S. industry																												
Management/Technical Support																												
Development of DoD program relevant application prototypes																												
Develop a clearable, knowledgeable workforce to support and execute DoD program workforce modernization needs in microelectronics																												
Stimulate rapid maturation and transition of emerging technologies and co-development with industry for assurance and security																												
Microelectronics Assurance and Supply Chain Standards and Best Practices Development																												
U.S. Government and Industry Engagement for demonstration of data driven evidence-based assurance tools, techniques, and risk-based metrics																												
Microelectronics Assurance and Supply Chain Training for U.S. Government and Industry																												
DoD Microelectronics Assurance and Supply Chain Policy and Guidance Development/ Update																												
Application Specific Integrated Circuit (ASIC) netlist analysis capability development																												
Field programmable gate array (FPGA) analyses tool development																												

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

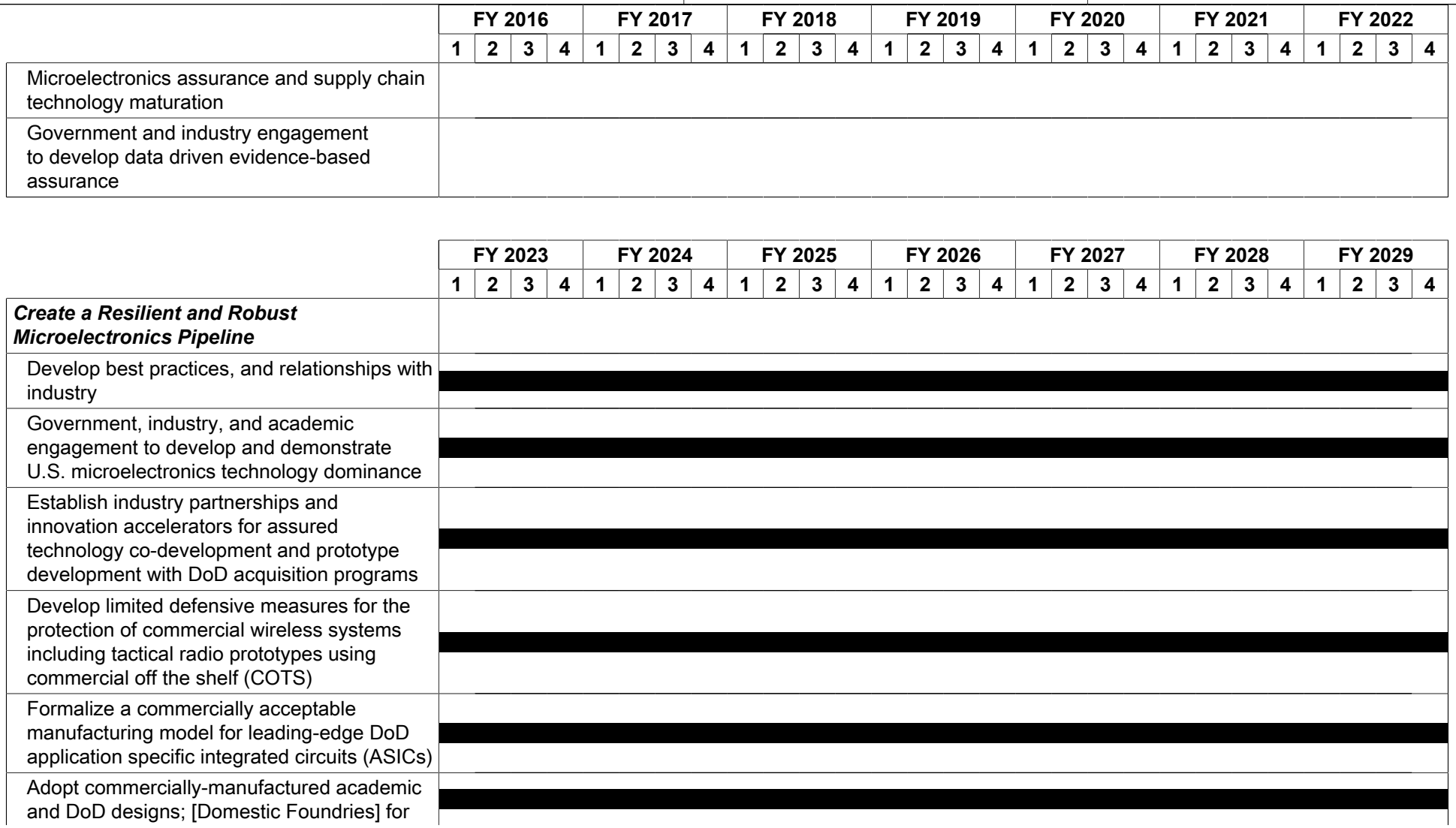


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

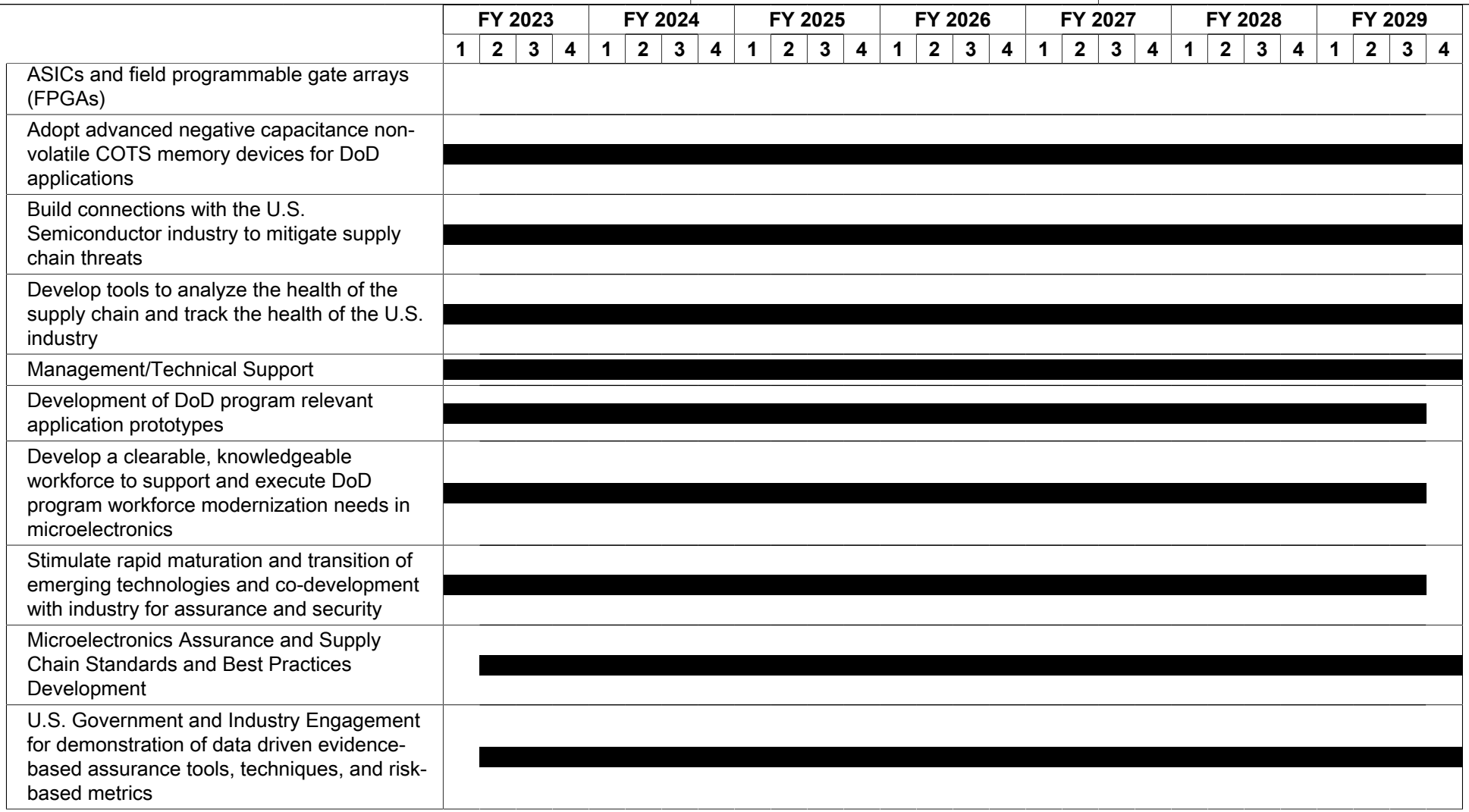


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

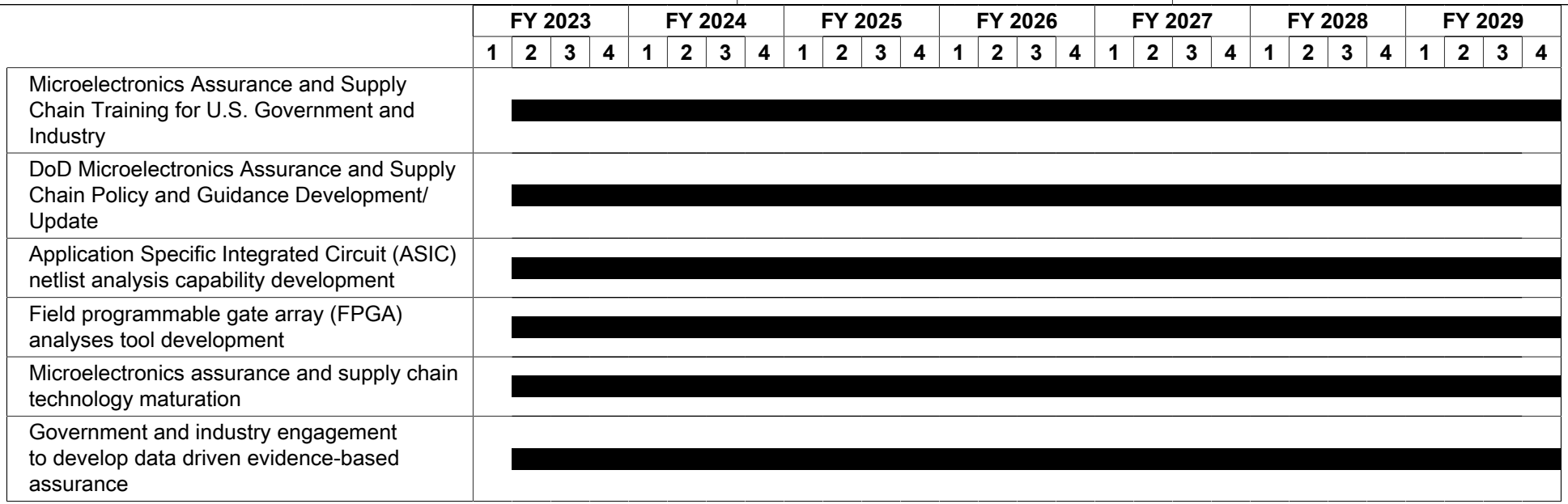


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Create a Resilient and Robust Microelectronics Pipeline				
Develop best practices, and relationships with industry	2	2021	4	2029
Government, industry, and academic engagement to develop and demonstrate U.S. microelectronics technology dominance	2	2021	4	2029
Establish industry partnerships and innovation accelerators for assured technology co-development and prototype development with DoD acquisition programs	2	2021	4	2029
Develop limited defensive measures for the protection of commercial wireless systems including tactical radio prototypes using commercial off the shelf (COTS)	2	2021	4	2029
Formalize a commercially acceptable manufacturing model for leading-edge DoD application specific integrated circuits (ASICs)	2	2021	4	2029
Adopt commercially-manufactured academic and DoD designs; [Domestic Foundries] for ASICs and field programmable gate arrays (FPGAs)	2	2021	4	2029
Adopt advanced negative capacitance non-volatile COTS memory devices for DoD applications	2	2021	4	2029
Build connections with the U.S. Semiconductor industry to mitigate supply chain threats	2	2021	4	2029
Develop tools to analyze the health of the supply chain and track the health of the U.S. industry	2	2021	4	2029
Management/Technical Support	2	2021	4	2029
Development of DoD program relevant application prototypes	2	2021	3	2029
Develop a clearable, knowledgeable workforce to support and execute DoD program workforce modernization needs in microelectronics	2	2021	3	2029
Stimulate rapid maturation and transition of emerging technologies and co-development with industry for assurance and security	2	2021	3	2029

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 912 / *Create an Evidence-Based Assured Microelectronics Pipeline*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Microelectronics Assurance and Supply Chain Standards and Best Practices Development	2	2023	4	2029
U.S. Government and Industry Engagement for demonstration of data driven evidence-based assurance tools, techniques, and risk-based metrics	2	2023	4	2029
Microelectronics Assurance and Supply Chain Training for U.S. Government and Industry	2	2023	4	2029
DoD Microelectronics Assurance and Supply Chain Policy and Guidance Development/Update	2	2023	4	2029
Application Specific Integrated Circuit (ASIC) netlist analysis capability development	2	2023	4	2029
Field programmable gate array (FPGA) analyses tool development	2	2023	4	2029
Microelectronics assurance and supply chain technology maturation	2	2023	4	2029
Government and industry engagement to develop data driven evidence-based assurance	2	2023	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604294D8Z / *Trusted and Assured Microelectronics*	Project (Number/Name) 913 / *Defense Microelectronics Cross-Functional Team Funding*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
913: *Defense Microelectronics Cross-Functional Team Funding*	0.000	3.924	4.023	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The decrease of $4.023 million between FY 2024 and FY 2025 is due to the scheduled sunset of this program after FY 2024.

A. Mission Description and Budget Item Justification

Microelectronics components are the foundation of modern military systems. The Department of Defense (DoD) is exposed to various vulnerabilities that threaten the ability to source microelectronics needed to sustain programs of record. To prepare the Department for Great Power Competition, the DoD must take action to ensure access to the microelectronic components needed to sustain our defense programs and systems effectively and affordably. The Department also needs a better strategy to transition leading edge technology developed by both government and industry to DoD programs of record, to ensure the Department maintains a competitive edge.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense Microelectronics Cross-Functional Team Funding	3.924	4.023	0.000
Description: A Cross-Functional Team (CFT) was established effective January 2021 to develop a DoD strategy and implementation and transition plan to minimize vulnerabilities within the Department's microelectronic supply chain. The transition plan will be comprehensive, and include a budget plan. The CFT will function as an advisory body to the Deputy Secretary of Defense (DSD), the Under Secretary of Defense for Research and Engineering (USD(R&E)), the Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)) to strengthen the domestic microelectronics supply chain. ***FY 2024 Plans:*** The CFT will continue to detail subject matter experts from the Services to the CFT and execute contracts for studies to supply the analysis necessary to inform the DoD strategy development. ***FY 2025 Plans:*** None. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $4.023 million between FY 2024 and FY 2025 is due to the scheduled sunset of this program after FY 2024.			
Accomplishments/Planned Programs Subtotals	3.924	4.023	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 913 / *Defense Microelectronics Cross-Functional Team Funding*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 913 / *Defense Microelectronics Cross-Functional Team Funding*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Defense Microelectronics Cross-Functional Team Funding	MIPR	TBD : TBD	-	3.924	Apr 2023	4.023	Apr 2024	0.000		-		0.000	Continuing	Continuing	-
		Subtotal	-	3.924		4.023		0.000		-		0.000	Continuing	Continuing	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	3.924		4.023		0.000		-		0.000	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 913 / *Defense Microelectronics Cross-Functional Team Funding*

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Defense Microelectronics Cross-Functional Team Funding																												
Program Support																												

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 913 / *Defense Microelectronics Cross-Functional Team Funding*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Defense Microelectronics Cross-Functional Team Funding				
Program Support	2	2023	4	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	502.023	105.990	110.291	152.126	-	152.126	120.879	116.498	119.033	121.414	-	-
638: *Rapid Prototyping Program*	502.023	105.990	110.291	152.126	-	152.126	120.879	116.498	119.033	121.414	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland, Build Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

The Rapid Prototyping Program (RPP) supports the rapid development of prototypes required in 12-to-24 months (technical maturation TRL 7-9) to address Joint urgent needs identified through ideation with the Joint Staff, Combatant Commands, or Secretary of Defense guidance. Prototype requirements are developed using threat-informed physics-based mission analyses and are evaluated under the Office of the Assistant Secretary of Defense for Mission Capabilities' (ASD(MC)) campaign of experimentation, resulting in a military utility assessment. RPP may support the maturation of Joint prototypes across the Department (to include those developed by the Strategic Capabilities Office (SCO), Defense Innovation Unit (DIU), Defense Advanced Research Projects Agency (DARPA), and the Services (TRL 5-6)) that have successfully demonstrated a required capability but have not been independently assessed in an inneroperable, system of system architectures.

Overarching program goals include modernization of cross-cutting Joint technology areas, providing fieldable end-to-end mission capabilities for joint application, informing disparate programs of record, and delivering capabilities more quickly than traditional acquisition. RPP develops prototypes that reduce technical and integration risk across the services and accelerate capabilities to programs of record and future experimentation, including Rapid Defense Experimentation Reserve (RDER) Joint experiments. RPP project selection aligns to priority Joint mission threads and technology areas including artificial intelligence / machine learning; autonomous systems; hypersonics; electronic warfare; sensors for intelligence, surveillance, and reconnaissance (ISR); and resilient communications. RPP rapidly develops and fields cross-cutting, Joint prototype capabilities demonstrated in an operational environment to inform DoD and Service leadership.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	109.189	110.291	112.483	-	112.483
Current President's Budget	105.990	110.291	152.126	-	152.126
Total Adjustments	-3.199	0.000	39.643	-	39.643
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.188	-			
• Cancelled Account	-0.011	-	-	-	-
• Program Adjustments	-	-	39.643	-	39.643

Change Summary Explanation

FY 2025 net increase of $39.643 million consists of
$5.000 million classified increase
$65.400 million increase for JADC2 development
$0.368 million increases for Economic Assumptions.
-$1.125 million to meet DoD overall funding reductions, which were spread to mitigate impact.
-$30.000 million are funds realigned to Service RDT&E and Procurement PEs to fund selected efforts needed to meet operational needs

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604331D8Z / *Rapid Prototyping Program*	Project (Number/Name) 638 / *Rapid Prototyping Program*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
638: *Rapid Prototyping Program*	502.023	105.990	110.291	152.126	-	152.126	120.879	116.498	119.033	121.414	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Rapid Prototyping Program (RPP) develops prototypes to deliver capabilities, inform requirements, and bridge the gap between RDT&E activities and fieldable solutions. RPP facilitates and accelerates joint, cross-cutting prototyping efforts within the Services and Defense Agencies. This program has the agility to select, fund, and implement projects in the year of execution as new opportunities or threats emerge. In consultation with the Service Science and Technology (S&T) executives, selected projects generally receive a single year of funding to accelerate capability transition to Services' and Agencies' programs of record. Projects deemed critical by the Under Secretary of Defense for Research and Engineering (USD(R&E)) receive higher amounts of funding across multiple years. Planned funding supports the Joint Warfighting Concept (JWC), the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) critical technology areas, and Service and Agency needs to enable rapid response to emergent and time-sensitive threats.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Southern Cross Integrated Flight Research Experiment (SCIFIRE)	35.200	2.000	-
Description: SCIFIRE is a joint U.S. - Australia (AUS) partnership to develop and demonstrate an air-launched air-breathing hypersonic weapon prototype leveraging previous S&T investments in hypersonics. SCIFIRE will further mature hypersonic cruise missile technologies to engage time-critical, heavily defended, and high-value targets in a contested environment. The SCIFIRE form factor provides enhanced capability by allowing for integration on fighter aircraft. In FY 2023, project completed major design trades. The effort completed prototype system performance analysis and system design. Detailed design and analysis progressing toward Critical Design Review (CDR). Sub-scale wind tunnel testing to assess staging and stores loads complete. ***FY 2024 Plans:*** Transition project to U.S. Air Force Hypersonic Attack Cruise Missile (HACM) Program of Record for continued development and testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** SCIFIRE ends in December 2023 and transitions to the U.S. Air Force for continued development.			
Title: Joint Affordable Kill-Chain Closure (JAKCC)	3.655	-	-
Description: JAKCC supports the National Defense Strategy's priorities to modernize key capabilities and evolve innovative operational concepts. This effort integrates the fully networked command, control, and communications (FNC3); autonomy;			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
electronic warfare (EW); and intelligence, surveillance, and reconnaissance (ISR) prototypes developed on an autonomous platform. A series of incremental demonstration and experimentation activities are executed in coordination with the Services and Combatant Commands to validate the platform integrated prototype capability to accelerate development and adoption of cost effective and interoperable solutions for defense challenges. The JAKCC project leverages a government reference architecture developed in coordination with the Services and Combatant Commands to enable a Service agnostic prototype acquisition strategy. In FY 2023, the JAKCC project completed and transitioned work to U.S. Navy entities.			
Title: Wolfpack ***Description:*** Wolfpack will develop multi-domain prototypes that can deliver various payloads, both kinetic and non-kinetic, to a target from small, containerized launchers. Wolfpack leverages proven delivery platforms and integrates payloads to support ISR, kinetic, and decoy missions using attritable and swarming unmanned systems. Wolfpack prototypes will enable Joint mission engagement using integrated command and control of the Wolfpack unmanned platform and payload of swarming unmanned aerial systems that interface with multi-Service control systems. ***FY 2024 Plans:*** Continue system design and development. Integrate prototype payload with platform for system demonstration. ***FY 2025 Plans:*** Complete prototype system development and integrate prototype payload with platform for system live fire test. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in funding between FY 2024 and FY 2025 is to complete the major prototyping development activities with the addition of a major live demonstration and final testing, and to transition the prototypes.	6.490	12.900	24.000
Title: Stratospheric Payload Development and Maturation ***Description:*** This effort will mature platforms, and develop and integrate payloads, in support of stratospheric domain operations. High altitude payloads will enable and improve multi-domain communication and collaboration, and provide additional intelligence, surveillance, and reconnaissance (ISR) capabilities. ***FY 2024 Plans:*** Continue development and testing of three prototype payloads to integrate into surrogate test platforms. Mature high altitude, long endurance platforms. ***FY 2025 Plans:***	26.094	34.000	26.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Complete development and testing of three prototype payloads that integrate into surrogate test platforms. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease funding between FY 2024 and FY 2025 due to decrease in prototyping activities in FY 2025.			
Title: Swarming Prototype Attack Unmanned Aerial Systems ***Description:*** This effort will develop and integrate novel payloads and capabilities into existing unmanned aerial systems (UAS) to aid in kill-chain closure at the tactical edge. Effects will focus on autonomous target recognition, identification, and terminal engagement. Prototypes will seek to provide identification, targeting, and battle damage assessment with kinetic and non-kinetic effects. UAS will integrate swarm coordination and collaboration in multi-agent mission roles. Swarming Prototype Attack UAS will transition to the U.S. Navy. ***FY 2024 Plans:*** The Swarming Prototype Attack UAS effort will develop and test three prototype payloads to aid in find, fix, track, target, engage, and assess mission. ***FY 2025 Plans:*** The Swarming Prototype Attack UAS effort will complete development of prototype payloads and will demonstrate integrated system within unmanned aerial systems. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease in funding between FY 2024 and FY 2025 due to the shift of prototyping to demonstrating and testing activities.	-	9.771	8.500
Title: Asymmetric Air Defense ***Description:*** This effort will accelerate the development and maturation of modular payloads for ground launched effects in support of air defense. Prototypes will allow for distributed and layered air defense sub-systems operating against a range of threats. Small form factor interceptors will operate in contested environments against peer adversaries. ***FY 2024 Plans:*** The Asymmetric Air Defense will start prototype payload and platform development, refining the modular architecture and prototyping first payload subsystem. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in funding from FY 2024 to FY 2025 is due to the completion of prototyping activities and the shift to demonstration activities.	-	10.620	-
Title: Joint Fires Network	10.046	30.000	79.275

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The Joint Fires Network (JFN) prototype will connect sensors and weapon systems using enterprise and edge information technology to remove the latency of target quality data between multi-domain forces. The JFN will combine actionable and distributed data from sensors of multiple services to find, fix, track, target, engage, and assess (F2T2EA) targets using the most viable weapon system through an integrated joint fire control solution that will enable information and decision superiority at the combatant command level. In FY 2023, Joint Fires Network developed an initial prototype system with relevant combatant command. ***FY 2024 Plans:*** Joint Fires Network will refine, test, and demonstrate a federated JFN capability with advanced application integration. ***FY 2025 Plans:*** The effort will continue development of the federated JFN capability, expanding associated infrastructure and enablers to expand the JFN network. The project will continue integration and connections to Service and mission partner capabilities to complete end-to-end Service kill chains and demonstrate an integrated Joint fires capability. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in funding from FY 2024 to FY 2025 is due to an increase in prototyping activities and expansion of the network to demonstrate the integrated Joint kill chain.			
Title: Mines and Fast Attack Craft ***Description:*** This effort will integrate, demonstrate and assess multiple mine and fast attack craft prototypes in support of combatant command mission threads. Prototypes will seek to provide autonomy for identification, targeting, and battle damage assessment with kinetic effects. ***FY 2025 Plans:*** This effort will demonstrate and assess a fast attack craft for priority combatant command missions. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** New project added to the Rapid Prototyping Program's portfolio. Project starts in FY 2025.	-	-	9.351
Title: High Power Microwave for Air Base Defense (HPM – ABAD) ***Description:*** The HPM prototype, Counter Cruise Missile Extended Range Air Base Air Defense (ABAD), is designed to deliver sufficient power levels to negate cruise missile threats. The system provides a low cost per shot and a deep magazine.	6.200	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
This FY 2023 effort integrated sensors with the ABAD HPM and assessed the capability of the integrated system. The risk mitigation testing supports transition to the Air Force and Navy, providing future capabilities to the U.S. Pacific Command.			
Title: Nationwide Integration of Time Resiliency for Operations (NITRO) ***Description:*** This prototyping effort with the National Guard to provide resilient time to U.S. critical infrastructure to prevent disruptions. NITRO receives data from multiple space and terrestrial position, navigation, and tracking (PNT) services, determines the best accurate time, and distributes accurate time without requiring changes to end-user equipment. In FY 2023, this effort prototyped a meshed sensor grid for determining the best time signal available and transitioned the capability to the National Guard for continued development and testing.	4.700	-	-
Title: Project Mayo ***Description:*** Project Mayo is a classified effort to support National Defense Strategy's priorities to modernize key capabilities and evolve innovative operational concepts. In FY 2023 funding supported test and evaluation activities of an existing solution integrated into novel environments.	3.900	-	-
Title: Large Displacement - Autonomous Underwater Vehicle (LD-AUV) ***Description:*** The Large Displacement - Autonomous Underwater Vehicle (LD-AUV) project provides for evaluation of an AUV for long-range missions with large kinetic effects capable of being delivered subsurface to disrupt and deny an adversary's ability to establish or maintain power at sea. This effort will accelerate prototype military demonstration and evaluation of the LD-AUV system performance and capability. In FY 2023, this effort tested and evaluated the LD-AUV prototype vehicle and associated capabilities in relevant ocean environments to perform the missions required for large-payload delivery.	1.000	-	-
Title: Low SWAP-C RF Sensors ***Description:*** This effort will develop and demonstrate a wirelessly networked low-SWaP low-cost radio frequency (RF) sensor for asymmetric awareness over large maritime areas over a 12 month period. The prototype will monitor RF signals that indicate manned or unmanned activity over large geographical areas, particularly areas that stretch along a critical border or shoreline. In FY 2023, this effort developed a prototype system with tools to minimize the detectable RF footprint.	0.830	2.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: In FY 2024, the project will demonstrate the collection of signals in a realistic environment outside the continental United States. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Project ends in FY 2024.			
Title: Underwater Resupply/Autonomous Unmanned Vehicle (UWR AUV) ***Description:*** The Underwater Resupply/Autonomous Unmanned Vehicle (UWR AUV) effort will integrate novel capabilities onto commercial unmanned underwater vehicles (UUVs) for assessment and concept of operations (CONOPs) development. The UWR AUV will optimize sensors for maritime surveys, and integrate end effector payloads for kinetic and non-kinetic effects. Resulting data and integrated payloads will transition to the U.S. Navy. ***FY 2024 Plans:*** In FY 2024, this effort will integrate and optimize sensors for maritime surveys and payloads for delivery of kinetic and non-kinetic effects. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in funding from FY 2024 to FY 2025 is due to the decrease in required non-recurring engineering.	-	9.000	-
Title: Multi-domain Autonomous Tactical Expendable Radio (MATER) ***Description:*** MATER addresses the current challenge of low cost, attritable, frequency agile radios enabling joint force interoperability, especially on size weight and power constrained unmanned platforms. The intent of this effort is to leverage the multi-billion commercial investment in the development of low cost software-defined transceivers for the cellular industry and adapt militarily-relevant waveforms and applications for these platforms. This project has a foundation built upon the latest microelectronic processors operating in 5G cellphones, mobile broadband and IoT devices. Using these chips as the basis for a family of military communication devices allows the DoD not only to reap the benefits of their built-in advanced signal processing, encryption and acceleration capabilities, but also gain the size and power benefits of microelectronics manufactured at commodity scale on the most advanced micro-electronics manufacturing nodes for our low SWAP applications.	2.375	-	-
Title: Project Kahuna ***Description:*** The Project Kahuna effort will support the command and control of unmanned maritime platforms in disconnected, denied, intermittent, and limited communications environments. The effort will use proven commercial solutions to create and distribute an edge world model amongst a group of unmanned vehicles. The integrated solution will facilitate the rapid onboarding	3.500	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
of machine learning perception and detection models, manage peer-to-peer synchronization in a robust manner, and seamlessly integrate size, weight, and power (SWaP)-efficient edge computation hardware.			
Title: Multi-domain Unmanned Secure Integrated Communications (MUSIC) ***Description:*** This effort will develop and integrate an advanced networked capability to ensure tactical communications in denied and degraded environments. The capability will leverage multiple available communication networks to create resilient and dynamic communication pathways that seamlessly adapt to changing conditions. The highly dynamic and distributed communications network will be designed to scale across thousands of nodes and automatically prioritize traffic flows across the mission network in real-time. In FY 2023, MUSIC integrated the advanced networking capability for demonstration and assessment.	2.000	-	-
Title: Project Rain ***Description:*** This effort will develop an Intelligence, Surveillance, and Reconnaissance (ISR) and advanced Electronic Warfare (EW) payload in support of the Joint warfighter. Additional details are classified. ***FY 2025 Plans:*** In FY 2025, will develop a prototype system for a classified mission. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The project starts in FY 2025.	0.000	-	5.000
Accomplishments/Planned Programs Subtotals	105.990	110.291	152.126

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

RPP leverages the Services' and Defense Agencies' most efficient and effective acquisition approach for rapid prototyping. This includes using Other Transaction Authorities and new or existing contract vehicles.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SCIFIRE	MIPR	Air Force Life Cycle Management Center : Eglin, FL	120.746	28.056		1.998		-		-		-	0.000	150.800	-
SCIFIRE	MIPR	MISC : Multiple	1.522	-		-		-		-		-	-	-	-
SCIFIRE	Option/ FP	Johns Hopkins University Applied Physics Laboratory : Laurel, MD	1.000	-		-		-		-		-	-	-	-
JAKCC	C/FP	Lead Systems Integrator : Multiple	39.823	-		-		-		-		-	-	-	-
JAKCC	C/FP	MULTI : MULTI	1.204	-		-		-		-		-	-	-	-
JAKCC	MIPR	MISC : Multiple	1.921	-		-		-		-		-	-	-	-
VARIOUS	MIPR	MULTI : MULTI	335.807	77.934	Sep 2023	108.293	Sep 2024	152.126		-		152.126	Continuing	Continuing	-
		Subtotal	502.023	105.990		110.291		152.126		-		152.126	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	502.023	105.990		110.291		152.126		-		152.126	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

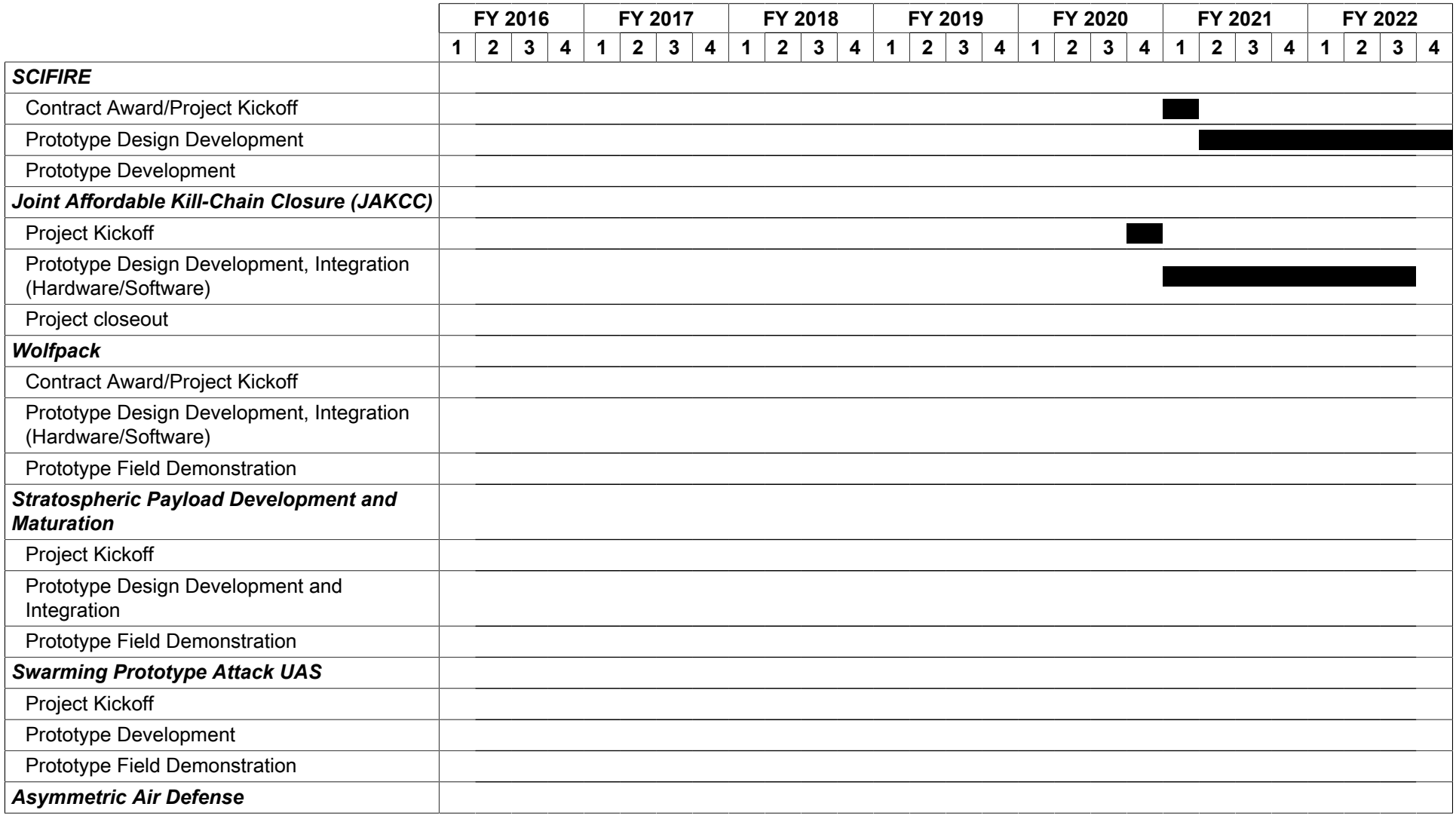

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Project Kickoff																												
Prototype Development																												
Prototype Field Demonstration																												
Joint Fires Network (JFN)																												
Project Kickoff																												
Prototype Development																												
Prototype Field Demonstration																												
Mines and Fast Attack Craft																												
Project Kickoff																												
Prototype Development																												
Prototype Field Demonstration																												
High Power Microwave for Air Base Defense (HPM – ABAD)																												
Project Kickoff																												
Sensor Integration																												
Prototype Field Demonstration																												
Nationwide Integration of Time Resiliency for Operations (NITRO)																												
Project Kickoff																												
Prototype Development																												
Prototype Field Demonstration																												
Project Mayo																												
Project Kickoff																												
Prototype Field Assessment																												
Large Displacement - Autonomous Underwater Vehicle (LD-AUV)																												

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Project Kickoff																												
Prototype Development																												
Prototype Field Demonstration																												
Low SWAP-C RF Sensors																												
Project Kickoff																												
Prototype Development																												
Prototype Field Demonstration																												
Underwater Resupply/Autonomous Unmanned Vehicle (UWR AUV)																												
Project Kickoff																												
Prototype Development																												
Prototype Field Demonstration																												
Multi-domain Autonomous Tactical Expendable Radio (MATER)																												
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Prototype Development																												
Prototype Field Demonstration																												
Project Kahuna																												
Project Kickoff																												
Prototype Development																												
Prototype Field Demonstration																												
Multi-domain Unmanned Secure Integrated Communications (MUSIC)																												
Project Kickoff																												
Prototype Development																												
Prototype Field Demonstration																												

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Project Rain																												
Project Kickoff																												
Prototype Development																												
Prototype Field Demonstration																												

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SCIFIRE																												
Contract Award/Project Kickoff																												
Prototype Design Development																												
Prototype Development																												
Joint Affordable Kill-Chain Closure (JAKCC)																												
Project Kickoff																												
Prototype Design Development, Integration (Hardware/Software)																												
Project closeout																												
Wolfpack																												
Contract Award/Project Kickoff																												
Prototype Design Development, Integration (Hardware/Software)																												
Prototype Field Demonstration																												
Stratospheric Payload Development and Maturation																												
Project Kickoff																												
Prototype Design Development and Integration																												

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

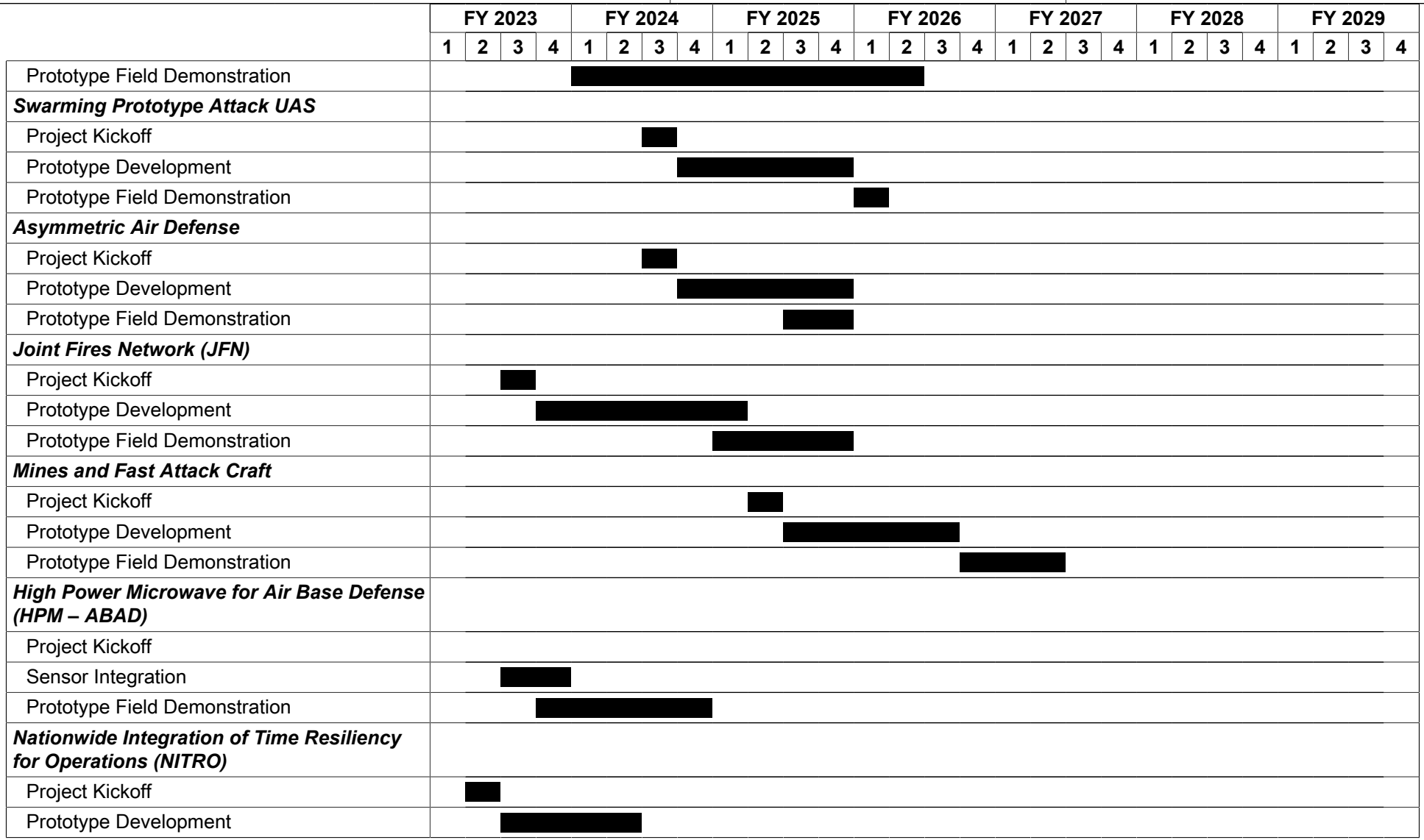


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

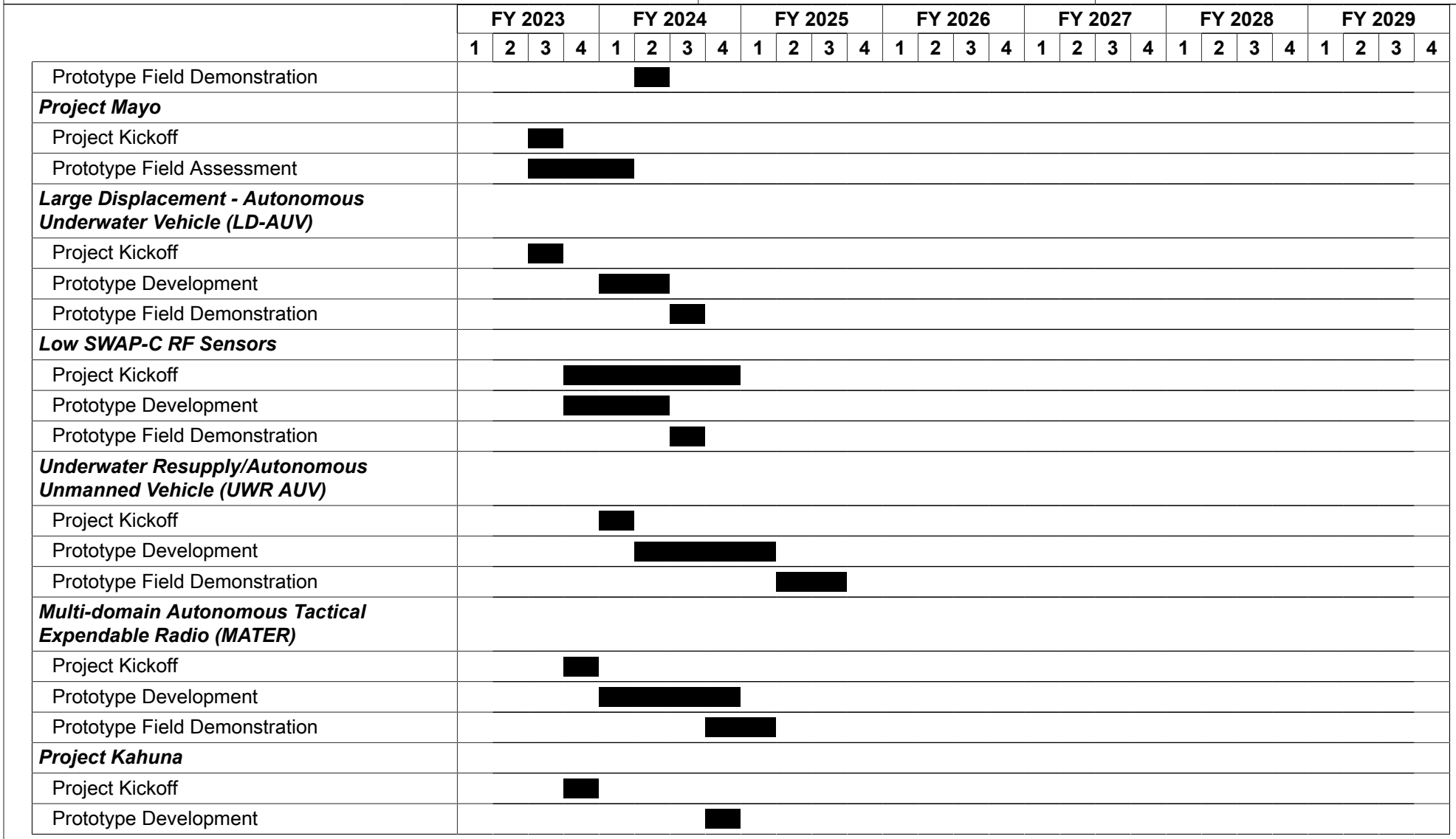


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

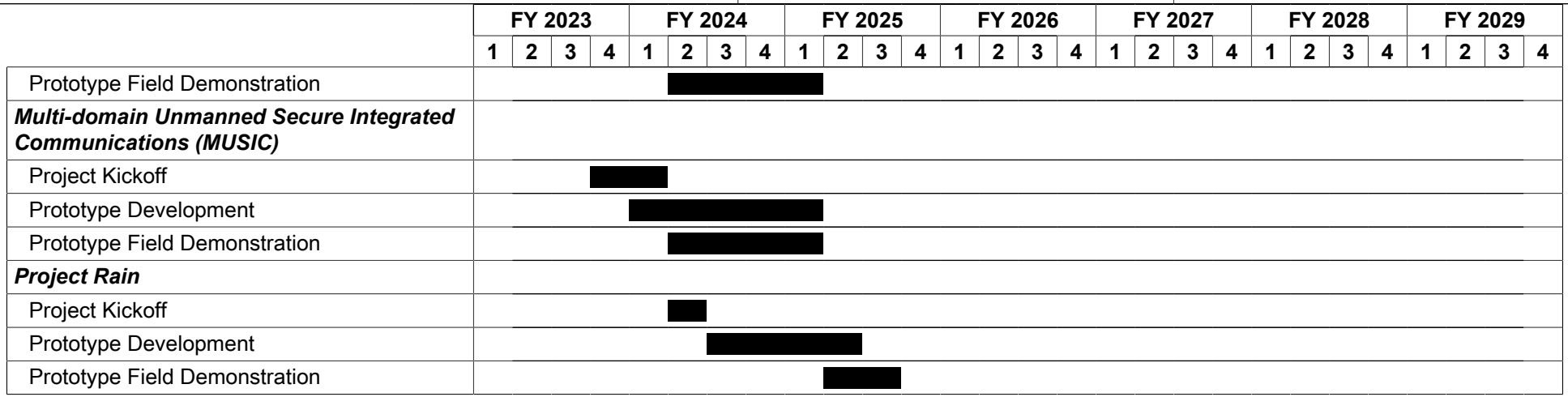


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
SCIFIRE				
Contract Award/Project Kickoff	1	2021	1	2021
Prototype Design Development	2	2021	4	2023
Prototype Development	4	2023	1	2024
Joint Affordable Kill-Chain Closure (JAKCC)				
Project Kickoff	4	2020	4	2020
Prototype Design Development, Integration (Hardware/Software)	1	2021	3	2022
Project closeout	1	2023	3	2023
Wolfpack				
Contract Award/Project Kickoff	4	2023	4	2023
Prototype Design Development, Integration (Hardware/Software)	4	2023	3	2025
Prototype Field Demonstration	4	2025	4	2025
Stratospheric Payload Development and Maturation				
Project Kickoff	2	2023	2	2023
Prototype Design Development and Integration	4	2023	4	2025
Prototype Field Demonstration	1	2024	2	2026
Swarming Prototype Attack UAS				
Project Kickoff	3	2024	3	2024
Prototype Development	4	2024	4	2025
Prototype Field Demonstration	1	2026	1	2026
Asymmetric Air Defense				
Project Kickoff	3	2024	3	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Prototype Development	4	2024	4	2025
Prototype Field Demonstration	3	2025	4	2025
Joint Fires Network (JFN)				
Project Kickoff	3	2023	3	2023
Prototype Development	4	2023	1	2025
Prototype Field Demonstration	1	2025	4	2025
Mines and Fast Attack Craft				
Project Kickoff	2	2025	2	2025
Prototype Development	3	2025	3	2026
Prototype Field Demonstration	4	2026	2	2027
High Power Microwave for Air Base Defense (HPM – ABAD)				
Project Kickoff	1	2018	1	2018
Sensor Integration	3	2023	4	2023
Prototype Field Demonstration	4	2023	4	2024
Nationwide Integration of Time Resiliency for Operations (NITRO)				
Project Kickoff	2	2023	2	2023
Prototype Development	3	2023	2	2024
Prototype Field Demonstration	2	2024	2	2024
Project Mayo				
Project Kickoff	3	2023	3	2023
Prototype Field Assessment	3	2023	1	2024
Large Displacement - Autonomous Underwater Vehicle (LD-AUV)				
Project Kickoff	3	2023	3	2023
Prototype Development	1	2024	2	2024
Prototype Field Demonstration	3	2024	3	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Low SWAP-C RF Sensors				
Project Kickoff	4	2023	4	2024
Prototype Development	4	2023	2	2024
Prototype Field Demonstration	3	2024	3	2024
Underwater Resupply/Autonomous Unmanned Vehicle (UWR AUV)				
Project Kickoff	1	2024	1	2024
Prototype Development	2	2024	1	2025
Prototype Field Demonstration	2	2025	3	2025
Multi-domain Autonomous Tactical Expendable Radio (MATER)				
Project Kickoff	4	2023	4	2023
Prototype Development	1	2024	4	2024
Prototype Field Demonstration	4	2024	1	2025
Project Kahuna				
Project Kickoff	4	2023	4	2023
Prototype Development	4	2024	4	2024
Prototype Field Demonstration	2	2024	1	2025
Multi-domain Unmanned Secure Integrated Communications (MUSIC)				
Project Kickoff	4	2023	1	2024
Prototype Development	1	2024	1	2025
Prototype Field Demonstration	2	2024	1	2025
Project Rain				
Project Kickoff	2	2024	2	2024
Prototype Development	3	2024	2	2025
Prototype Field Demonstration	2	2025	3	2025

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	67.693	40.368	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
843: *DIU Prototyping*	62.693	25.155	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
844: *National Security Innovation Capital*	5.000	15.213	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

Note

New Start (Y/N): No

Starting in FY 2024, funding re-aligned to new National Security Innovation Capital (NSIC) Program Element (PE) 0603021D8Z and Defense Innovation Unit PE 0603342D8Z to better align funding to the mission.

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build a Sustainable and Long-Term Advantage and Build a Resilient Joint Force and Defense Ecosystem.

The Defense Innovation Unit (DIU) mission is to strengthen U.S. national security by accelerating the adoption of commercial technology throughout the military and growing the national security innovation base. DIU partners with organizations across the DoD and the interagency to rapidly prototype, field, and scale commercial solutions that can save lives, lead to new operational concepts, increase efficiencies, and save taxpayer dollars. With offices in Silicon Valley, Boston, Austin, Chicago, and in the Pentagon, DIU is able to attract the best and brightest talent and cutting-edge solutions.

The National Defense Strategy for FY 2022 asserts that we have returned to an era of inter-state strategic competition with Russia and China, heightening the sense of urgency with which the nation, and Department of Defense (DoD), must reform our acquisition policies and approach to sustaining military-technical superiority. Notably, 11 of the 14 critical technology focus areas are dual use and rapidly developed by the commercial sector. While adversaries are challenging the U.S. across several dimensions, most importantly, our near peer competitors are at par or ahead of the United States in critical technology areas. Consistent with the Administration's research and development budget priorities, this new era of competition requires technological superiority to ensure the United States' ability to project power, maintain international norms and rule of law, provide credible deterrence, and prevail in conflict.

On April 4, 2023, the Secretary of Defense issued a memorandum re-elevating the DIU Director as a direct report to the Secretary of Defense and refocusing DIU on delivering strategic impact at scale and at speed through direct operations and catalyst of the innovation community for the Department.

DIU increases the Department's access to commercial technologies and talent, with the ultimate goal of fielding commercial technology at a pace that effectively deters our adversaries and helps ensure victory if we are forced to fight. Working across the country, and in collaboration with our allies and partners, DIU is developing new ways of doing business, growing our national security innovation base to include more "non-traditional" companies that had previously not collaborated with the military,

working with traditional vendors in novel ways to increase efficiency, and challenging innovators to share their knowledge and expertise in support of our nation's defense.

Through a competitive prototype process, DIU identifies and provides access to technology companies and products on behalf of DoD organizations. Additionally, DIU executes projects to leverage commercial sector technology analogous to military applications thereby increasing dual-use technology agility for the DoD. DIU Prototyping funds facilitate the award of projects that can augment commercial technologies, existing government-owned capabilities, or concepts for defense application.

DIU focuses on six technology areas where commercial industry is the lead:

• Artificial Intelligence (AI)/ Machine Learning (ML) – Applying AI/ML learning to accelerate critical decision making and operational impact.
• Autonomy – Adopting and countering autonomous systems with a focus on human-machine interaction and scalable teaming.
• Cyber – Making enterprise combat information open, accessible, and secure for defense personnel across the globe.
• Energy - Leveraging proven advancement in energy and materials technology to enhance capabilities and strengthen resilience across installation and distributed operations.
• Human Systems – Optimizing the human system and its enabling platforms through enhanced equipment, innovative training, and novel health applications.
• Space – Developing on-demand access to space, persistent satellite capabilities, and broadband space data transfer.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	41.902	0.000	0.000	-	0.000
Current President's Budget	40.368	0.000	0.000	-	0.000
Total Adjustments	-1.534	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.530	-			
• Cancelled Account	-0.004	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 843: *DIU Prototyping*		
Congressional Add: *Orbital Prototyping*	11.000	-
Congressional Add: *Visual Augmentation Technology*	6.500	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add Subtotals for Project: 843	17.500	-
Project: 844: *National Security Innovation Capital*		
Congressional Add: *Long Duration Energy Storage, including Lithium Batteries (also known as Jumpstart for Advanced Battery Standardization)*	0.000	-
Congressional Add Subtotals for Project: 844	0.000	-
Congressional Add Totals for all Projects	17.500	-

Change Summary Explanation

Starting in FY 2024, funding re-aligned to National Security Innovation Capital (NSIC) PE 0603021D8Z and Defense Innovation Unit PE 0603342D8Z to better align funding to the mission.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*				Project (Number/Name) 843 / *DIU Prototyping*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
843: *DIU Prototyping*	62.693	25.155	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Defense Innovation Unit (DIU) mission is to strengthen U.S. national security by accelerating the adoption of commercial technology throughout the military and growing the national security innovation base. DIU partners with organizations across the DoD and the interagency to rapidly prototype, field, and scale commercial solutions that can save lives, lead to new operational concepts, increase efficiencies, and save taxpayer dollars. With offices in Silicon Valley, Boston, Austin, Chicago, and in the Pentagon, DIU is able to attract the best and brightest talent and cutting-edge solutions.

The National Defense Strategy for FY 2022 asserts that we have returned to an era of inter-state strategic competition with Russia and China, heightening the sense of urgency with which the nation, and Department of Defense (DoD), must reform our acquisition policies and approach to sustaining military-technical superiority. Notably, 11 of the 14 critical technology focus areas are dual use and rapidly developed by the commercial sector. While adversaries are challenging the U.S. across several dimensions, most importantly, our near peer competitors are at par or ahead of the United States in critical technology areas. Consistent with the Administration's research and development budget priorities, this new era of competition requires technological superiority to ensure the United States' ability to project power, maintain international norms and rule of law, provide credible deterrence, and prevail in conflict.

DIU increases the Department's access to commercial technologies and talent, with the ultimate goal of fielding technology at a pace that effectively deters our adversaries and helps ensure victory if we are forced to fight. Working across the country, and in collaboration with our allies and partners, DIU is developing new ways of doing business, growing our national security innovation base to include more "non-traditional" companies that had previously not collaborated with the military, working with traditional vendors in novel ways to increase efficiency, and challenging innovators to share their knowledge and expertise in support of our nation's defense.

Through a competitive prototype process, DIU identifies and provides access to technology companies and products on behalf of DoD organizations. Additionally, DIU executes projects to leverage commercial sector technology analogous to military applications thereby increasing dual-use technology agility for the DoD. DIU Prototyping funds facilitate the award of projects that can augment commercial technologies, existing government-owned capabilities, or concepts for defense application.

DIU focuses on six technology areas where commercial industry is the lead:

• Artificial Intelligence (AI)/ Machine Learning (ML) – Applying AI/ML learning to accelerate critical decision making and operational impact.
• Autonomy – Adopting and countering autonomous systems with a focus on human-machine interaction and scalable teaming.
• Cyber – Making enterprise combat information open, accessible, and secure for defense personnel across the globe.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

• Energy - Leveraging proven advancement in energy and materials technology to enhance capabilities and strengthen resilience across installation and distributed operations.
• Human Systems – Optimizing the human system and its enabling platforms through enhanced equipment, innovative training, and novel health applications.
• Space – Developing on-demand access to space, persistent satellite capabilities, and broadband space data transfer.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense Innovation Unit (DIU) Prototyping ***Description:*** DIU executes its mission through partnerships with Services, combatant commands, and other DoD organizations to prototype commercial solutions and scale across the Joint Force.	7.655	-	-
Accomplishments/Planned Programs Subtotals	7.655	-	-

	FY 2023	FY 2024
Congressional Add: Orbital Prototyping ***FY 2023 Accomplishments:*** These funds have been allocated to support the development and delivery of strategically impactful capabilities to the Space Domain for the Joint Force to include: • DIU RAPID on-orbit refueling program that is a multi-phase program to develop an agile and persistent ability to refuel to maneuver without regret, enabling survivable, persistent, and effective use of systems • The newly launched Novel Responsive Space Delivery will prototype strategically impactful delivery of cargo to, through, and from space. • Hybrid Space Architecture to develop secured, assured, low latency and multi-path communications spanning global conflict, contingency and peacetime • Continue prototyping low-cost, responsive launch options for the Department	11.000	-
Congressional Add: Visual Augmentation Technology ***FY 2023 Accomplishments:*** Tactical Augmented Reality is a modular augmented-reality vision system that provides users with a real-time overlay of tactical data. DIU is partnered with the Defense Intelligence Agency (DIA), Special Operations Command (SOCOM), and Air Force Life Cycle Management Center / Rapid Sustainment Office (AFLCMC/RO) to deliver Tactical Augmented Reality. The funds have been allocated to multiple vendors to prototype and combine sensors, networking, operating system, and visualization capabilities in support of Tactical Augmented Reality. The solution will allow DoD users to reduce the cognitive load associated with the display and processing of real time data in both static use	6.500	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

	FY 2023	FY 2024
cases (e.g. aircraft maintenance) and dynamic use cases (e.g. tactical operations on the battlefield), leading to enhanced lethality, survivability, and mission accomplishment.		
Congressional Adds Subtotals	17.500	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

DIU primarily utilized Title 10 U.S. Code § 4022 authority to prototype projects to enhance military effectiveness through the Commercial Solutions Opening (CSO) process.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

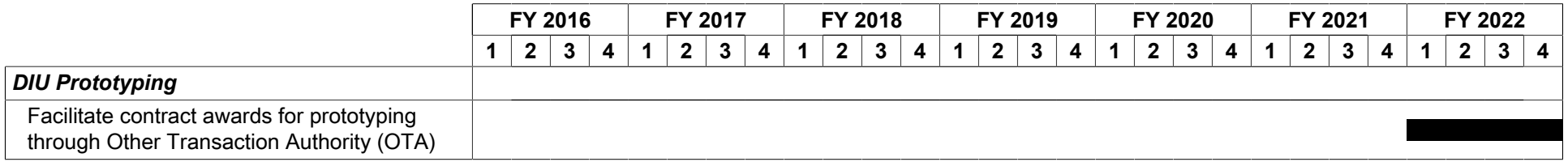
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DIU Prototyping	MIPR	Various : Various	23.055	25.155		-		-		-		-	Continuing	Continuing	-
Autonomy	C/FFP	Various : Various	3.650	-		-		-		-		-	Continuing	Continuing	-
Cyber	C/FFP	Various : Various	3.820	-		-		-		-		-	Continuing	Continuing	-
Human System	C/FFP	Various : Various	3.491	-		-		-		-		-	Continuing	Continuing	-
Space	C/FFP	Various : Various	8.677	-		-		-		-		-	Continuing	Continuing	-
COVID	C/FFP	Various : Various	5.000	-		-		-		-		-	Continuing	Continuing	-
AE&M	C/FFP	Various : Various	0.000	-		-		-		-		-	Continuing	Continuing	-
National Security Innovation Capital	MIPR	Various : Various	15.000	-		-		-		-		-	Continuing	Continuing	-
		Subtotal	62.693	25.155		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	62.693	25.155		-		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*



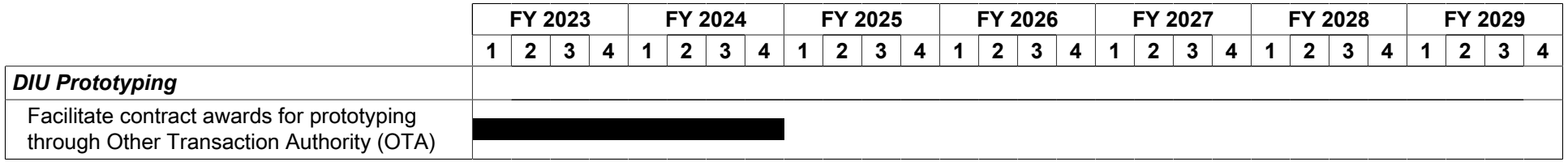


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DIU Prototyping				
Facilitate contract awards for prototyping through Other Transaction Authority (OTA)	1	2022	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*	Project (Number/Name) 844 / *National Security Innovation Capital*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
844: *National Security Innovation Capital*	5.000	15.213	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of NSIC is to accelerate the development of dual-use hardware technologies critical to our national security and economic competitiveness. It is an initiative that enables dual-use hardware startups to advance key milestones in their product development by addressing the shortfall of private investment from trusted sources. NSIC's support enables companies to develop their technologies and products more rapidly. The resulting reductions in technical risk, along with the signaling of DoD interest in such dual-use companies, attracts trusted private investment that might otherwise sit on the sidelines. The overall result is more rapid and robust development of hardware in the U.S., the expansion of the defense industrial base and reduction of technology flow to adversaries.

Initial broad areas of focus are autonomy, communications, power, sensors, and space.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: National Security Innovation Capital (NSIC) ***Description:*** In FY 2021 NSIC received an appropriation of $15M from Congress. NSIC utilized that appropriation to fund contracts with nine startup companies whose technologies covered the five different Topics of Interest described above. Those technologies involved, among others: hypersonics, quantum phenomena and microelectronics. Contracts ranged from $0.5 million to $3 million over periods of performance between twelve and eighteen months. The companies are located across the country including TX, SC, MI, MA, CO, and CA. This $15 million congressional add was executed in Project Code P843 of this Program Element.	15.213	-	-
Accomplishments/Planned Programs Subtotals	15.213	-	-

	FY 2023	FY 2024
Congressional Add: Long Duration Energy Storage, including Lithium Batteries (also known as Jumpstart for Advanced Battery Standardization) ***FY 2023 Accomplishments:*** N/A	0.000	-
Congressional Adds Subtotals	0.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*	**Project (Number/Name)** 844 / *National Security Innovation Capital*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

NSIC primarily utilizes Title 10 U.S. Code § 2371b Other Transactions Authority to prototype projects to further develop dual-use, hardware-based technologies that are critical to the military through the Commercial Acceleration Opportunity (CAO) process.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*	**Project (Number/Name)** 844 / *National Security Innovation Capital*

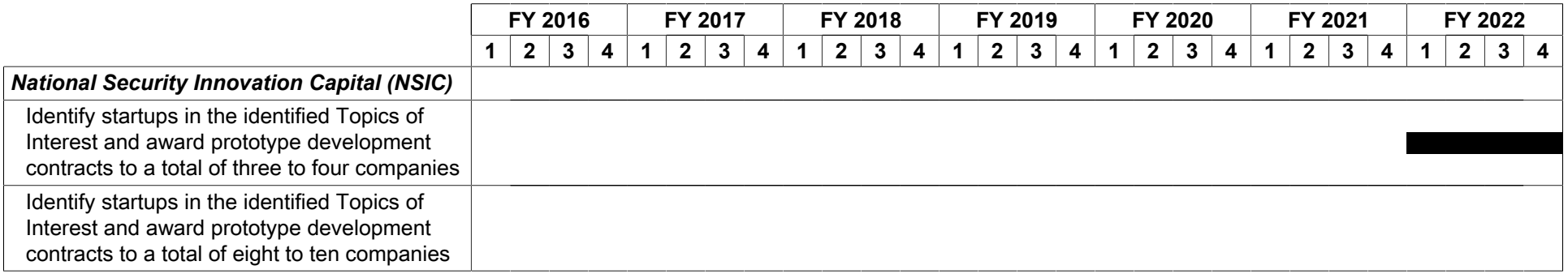
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NSIC	C/TBD	Various : Various	5.000	15.213	Mar 2023	-		-		-		-	Continuing	Continuing	-
		Subtotal	5.000	15.213		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.000	15.213		-		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*	**Project (Number/Name)** 844 / *National Security Innovation Capital*



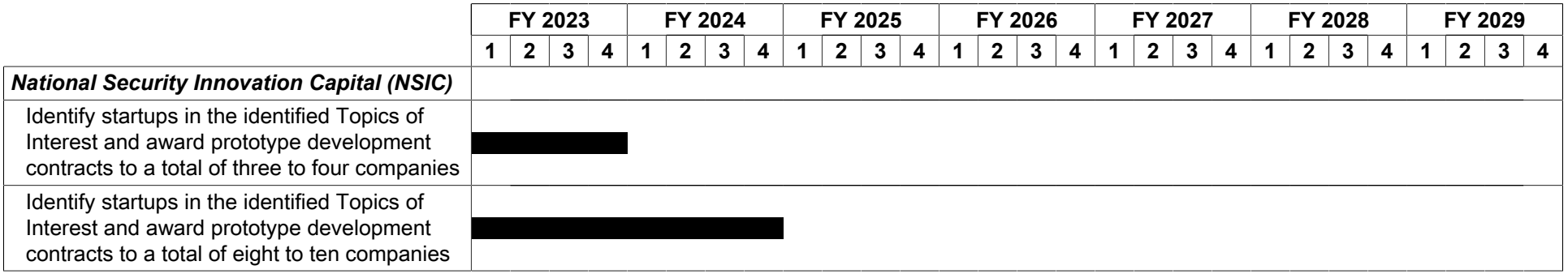


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *Defense Innovation Unit (DIU) Prototyping*	**Project (Number/Name)** 844 / *National Security Innovation Capital*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
National Security Innovation Capital (NSIC)				
Identify startups in the identified Topics of Interest and award prototype development contracts to a total of three to four companies	1	2022	4	2023
Identify startups in the identified Topics of Interest and award prototype development contracts to a total of eight to ten companies	1	2023	4	2024

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604400D8Z *I Department of Defense (DoD) Unmanned Systems Common Development*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	102.262	7.305	2.643	2.527	-	2.527	2.508	2.473	2.513	2.560	-	-
440: *Unmanned Systems Development*	57.585	3.906	0.747	0.710	-	0.710	0.705	0.694	0.705	0.718	-	-
442: *Unmanned Systems Integration*	40.272	3.121	1.653	1.583	-	1.583	1.571	1.550	1.576	1.605	-	-
443: *Unmanned Systems Integration Support*	4.405	0.278	0.243	0.234	-	0.234	0.232	0.229	0.232	0.237	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The DoD's Unmanned System Common Development Program allows the Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S)) to support both the near-term and long-term advancement of DoD unmanned systems capabilities. This includes the development of common technologies, standards, concepts, and guidance that can be applied across all Military Services. Currently, this effort is primarily focused on the development of technologies and concepts that support the operation of DoD Small Unmanned Aircraft System (UAS) both in the U.S. National Airspace and in an expeditionary environment. While the initial focus is on Small UAS, supporting unmanned systems of all sizes and modalities is the long-term goal. Key aspects of the initial Small UAS effort include (1) making available unmanned systems and components for DoD procurement and operation that are safe, secure, resilient, and interoperable, (2) facilitating access and integration of unmanned systems into military and civilian environments in a safe and effective manner, and (3) establishing and overseeing coordination, agreements, guidance, and standards that enable the DoD's operation of unmanned systems in military and civilian environments.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604400D8Z *I Department of Defense (DoD) Unmanned Systems Common Development*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	7.583	2.643	2.667	-	2.667
Current President's Budget	7.305	2.643	2.527	-	2.527
Total Adjustments	-0.278	0.000	-0.140	-	-0.140
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.278	-			
• Program Realignment	-	-	-0.140	-	-0.140

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 440: *Unmanned Systems Development*		
Congressional Add: *Department of Defense (DoD) Unmanned System Common Development*	1.000	-
Congressional Add Subtotals for Project: 440	1.000	-
Congressional Add Totals for all Projects	1.000	-

Change Summary Explanation

FY 2025 reduction of $0.140 Million for a Department program realignment.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	Project (Number/Name) 440 / *Unmanned Systems Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
440: *Unmanned Systems Development*	57.585	3.906	0.747	0.710	-	0.710	0.705	0.694	0.705	0.718	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports both near-term and long-term DoD unmanned system development goals by focusing on (1) making commercially developed unmanned systems available to the Department for procurement and operation that are cyber-secure, (2) identifying and mitigating unmanned system cyber vulnerability threats, and (3) developing standards, concepts, and guidance that support the Department's procurement and operation of unmanned systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Unmanned Systems Development	2.906	0.747	0.710

Description: FY 2023 Accomplishments: Under this program the DOD continued to support the Blue UAS effort to ensure safe, secure, resilient, and interoperable unmanned systems and components available for DoD procurement and operation. This includes adding several unique Blue UAS systems to the Blue UAS Cleared List and available for procurement on the GSA Schedule. This also includes supporting the sustainment of all existing and new Blue UAS systems to ensure the integrity of these platforms are maintained over time.

FY 2024 Plans:
- Continue rapidly identifying, testing, selecting, and making available commercial Small UAS capable of meeting the operational demands of the DoD. This effort is intended to increase the availably of Blue UAS and Blue UAS components for future procurement by the DoD.
- Continue conducting penetration testing and cybersecurity assessment on unmanned systems in order to assess and validate system security and provide the Government with an understanding of the level of security risk incurred by system operation.
- Integrate Cyber Security Policies and standards into unmanned system Architectures.
- Continue the development of unmanned systems cyber security concepts in order to limit cyber security vulnerabilities.
- Continue updating the Department's unmanned systems integrated roadmap.
- Continue validating autonomous safety precepts for unmanned systems.
- Improve cybersecurity and communication links of unmanned systems.
- Continue to develop safety standards and policy for unmanned and autonomous systems that will allow for the incorporation of artificial intelligence.
- Develop autonomy test and evaluation standards and architectures using modeling and simulation.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 440 / *Unmanned Systems Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Support for unmanned systems interoperability and integration workshop and technical exchange meetings. - Investigating a cyber-secure solution for integrating artificial intelligent systems into unmanned systems. - Continue development and demonstrating of interoperable, standards-based, open architecture solution for cross-domain (air, ground, surface, sub-surface) unmanned systems communication. ***FY 2025 Plans:*** - Continue rapidly identifying, testing, selecting, and making available commercial Small UAS capable of meeting the operational demands of the DoD. This effort is intended to increase the availability of Blue UAS and Blue UAS components for future procurement by the DoD. - Continue conducting penetration testing and cybersecurity assessment on unmanned systems in order to assess and validate system security and provide the Government with an understanding of the level of security risk incurred by system operation. - Integrate Cyber Security Policies and standards into unmanned system Architectures. - Continue the development of unmanned systems cyber security concepts in order to limit cyber security vulnerabilities. - Continue updating the Department's unmanned systems integrated roadmap. - Continue validating autonomous safety precepts for unmanned systems. - Improve cybersecurity and communication links of unmanned systems. - Continue to develop safety standards and policy for unmanned and autonomous systems that will allow for the incorporation of artificial intelligence. - Develop autonomy test and evaluation standards and architectures using modeling and simulation. - Support unmanned systems interoperability and integration workshop and technical exchange meetings. - Investigating a cyber-secure solution for integrating artificial intelligent systems into unmanned systems. - Continue development and demonstrating of interoperable, standards-based, open architecture solution for cross-domain (air, ground, surface, sub-surface) unmanned systems communication. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no significant change between FY 2024 and FY 2025.			
Accomplishments/Planned Programs Subtotals	2.906	0.747	0.710

	FY 2023	FY 2024
Congressional Add: Department of Defense (DoD) Unmanned System Common Development	1.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 440 / *Unmanned Systems Development*

	FY 2023	FY 2024
FY 2023 Accomplishments: Various testing efforts focusing on the development and live flight demonstration of the of DoD UAS Traffic Management (UTM) related systems in coordination with the testing sites for Grand Forks North Dakota.		
Congressional Adds Subtotals	1.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 440 / *Unmanned Systems Development*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Unmanned Systems Development Support	C/CPFF	USAF/OSD : AFLCMC	57.585	3.906		0.747		0.710		-		0.710	Continuing	Continuing	-
		Subtotal	57.585	3.906		0.747		0.710		-		0.710	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	57.585	3.906		0.747		0.710		-		0.710	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 440 / *Unmanned Systems Development*

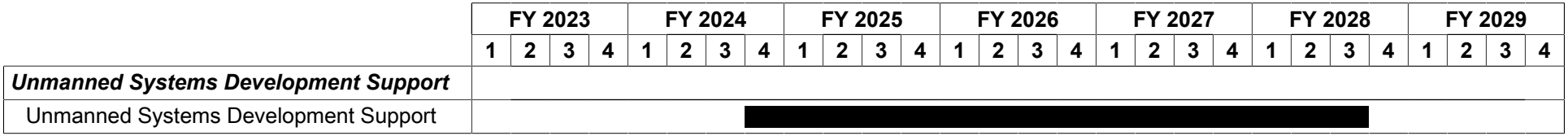


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 440 / *Unmanned Systems Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Unmanned Systems Development Support				
Unmanned Systems Development Support	4	2024	3	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	Project (Number/Name) 442 / *Unmanned Systems Integration*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
442: *Unmanned Systems Integration*	40.272	3.121	1.653	1.583	-	1.583	1.571	1.550	1.576	1.605	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports both near-term and long-term DoD UAS Integration goals by primarily focusing on (1) the safe and effective integration of UAS within civil and expeditionary airspace and (2) the development of standards, concepts, and guidance to support this integration. In the near-term, this project is focused on the development of concepts and prototype systems that support both the DoD UAS integration mission and DoD UAS security mission. This effort includes the development and integration of the following current airspace access and integration system initiatives: (1) COA Approval Processing System (CAPS), (2) UAS Drone Zone, (3) Low Altitude Authorization and Notification Capability (LAANC), and (4) UAS Traffic Management (UTM). The long-term goal of this project is to establish the ability for DoD UAS to safely, effectively, and routinely operate beyond visual line of sight in U.S. national, foreign national, international, training, and combat airspace. The results from this effort will be shared with federal partners, to include the Federal Aviation Administration (FAA), in order to help shape the development of LAANC and UTM related concepts, technology, and rule making.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Unmanned Systems Integration	3.121	1.653	1.583
Description: FY 2023 Accomplishments: Under this program the DOD conducted various testing efforts that focused on the continued development and testing of technologies and concepts that will support the DOD's long-term goal of enabling routine, efficient, safe, and secure airspace access and integration for DOD UAS operations conducted within both civilian and military airspace. This included conducting simulated and live flight demonstrations of DoD UAS Traffic Management (UTM) related systems in coordination with the NASA and the Northern Plains UAS Test Site (NPUASTS). This also included development of the DOD UTM concept of operations document to help align all DOD Research, Development, Test and Evaluation (RDT&E) efforts for UAS airspace integration towards a single objective. ***FY 2024 Plans:*** - Develop DoD prototype UAS integration/security systems and associated concepts that support DoD operations in both US national airspace and expeditionary airspace. - Ensure concepts and systems developed are aligned with the vision established in current UAS integration and security related concept of operations documents.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 442 / *Unmanned Systems Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Assist in the development of future DoD UAS integration and security related concept of operations documents through ongoing research and the execution of Operational Assessments and Demonstrations of UTM capabilities within the DoD and Federal Government. - Ensure systems and concepts developed support integration with FAA current/planned airspace access and airspace integration systems to include, but not limited to, UTM systems. - Develop and test methods to integrate DoD UAS into the UTM environment to include demonstrating a method to pass information between unmanned aircraft on the DIU Blue UAS Cleared List and the DoD prototype UTM Federal UAS Service Supplier (FUSS). - Develop UAS airspace integration procedures and standards as well as conduct modeling, simulation, and operational analysis needed to validate those procedures and standards. - Conduct live flight and simulated demonstrations using developed UAS integration and security systems and associated concepts in order to (1) demonstrate the latest capabilities, (2) assess system interoperability, (3) refine concepts and hardware/software solutions, and (4) validate current standards. - Develop recommendations for safe separation standards and techniques that enable low-altitude military UAS to remain clear of other aircraft. - Engage the FAA to advance DoD UAS and Counter UAS airspace integration.			
FY 2025 Plans: - Develop DoD prototype UAS integration/security systems and associated concepts that support DoD operations in both US national airspace and expeditionary airspace. - Ensure concepts and systems developed are aligned with the vision established in current UAS integration and security related concept of operations documents. - Assist in the development of future DoD UAS integration and security related concept of operations documents through ongoing research and the execution of Operational Assessments and Demonstrations of UTM capabilities within the DoD and Federal Government. - Ensure systems and concepts developed support integration with FAA current/planned airspace access and airspace integration systems to include, but not limited to, UTM systems. - Develop and test methods to integrate DoD UAS into the UTM environment to include demonstrating a method to pass information between unmanned aircraft on the DIU Blue UAS Cleared List and the DoD prototype UTM Federal UAS Service Supplier (FUSS). - Develop UAS airspace integration procedures and standards as well as conduct modeling, simulation, and operational analysis needed to validate those procedures and standards.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 442 / *Unmanned Systems Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Conduct live flight and simulated demonstrations using developed UAS integration and security systems and associated concepts in order to (1) demonstrate the latest capabilities, (2) assess system interoperability, (3) refine concepts and hardware/ software solutions, and (4) validate current standards. - Develop recommendations for safe separation standards and techniques that enable low-altitude military UAS to remain clear of other aircraft. - Engage the FAA to advance DoD UAS and Counter UAS airspace integration. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no significant change between FY 2024 and FY 2025.			
Accomplishments/Planned Programs Subtotals	3.121	1.653	1.583

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	Project (Number/Name) 442 / *Unmanned Systems Integration*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Unmanned Systems Integration	C/CPFF	Various : Various	40.272	3.121		1.653		1.583		-		1.583	Continuing	Continuing	-
		Subtotal	40.272	3.121		1.653		1.583		-		1.583	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	40.272	3.121		1.653		1.583		-		1.583	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 442 / *Unmanned Systems Integration*

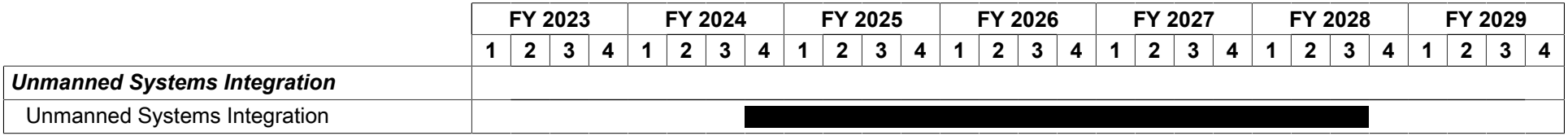


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 442 / *Unmanned Systems Integration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Unmanned Systems Integration				
Unmanned Systems Integration	4	2024	3	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	Project (Number/Name) 443 / *Unmanned Systems Integration Support*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
443: *Unmanned Systems Integration Support*	4.405	0.278	0.243	0.234	-	0.234	0.232	0.229	0.232	0.237	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the establishment and oversight of coordination, agreements, guidance, and standards that enable the DoD's operation of unmanned systems in military and civilian environments. This includes efforts identified by the DoD Chairman of the interagency UAS Executive Committee (UAS EXCOM) as being important to enabling increased and ultimately routine DoD UAS access to and integration within both civil and expeditionary airspace.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Unmanned Systems Integration Support	0.278	0.243	0.234

Description: FY 2023 Accomplishments: Under this program the DOD was able to finalize the Joint Small UAS Capability Development Document. This document helps DOD to drive Service interoperability, remove redundancies, determine mission areas, as well as define current and future artificial intelligence and autonomous capabilities. As a result, this integrated vision will drive critical warfighting capabilities for the Joint Force, enable supporting the industrial base and facilitate the generation of future sUAS military requirements. Under this program the DOD also re-established the UAS Executive Committee (EXCOM) and UAS Science and Research Panel (SARP) which is an interagency organization focused on synchronizing the federal government towards achieving its goal of enabling routine, efficient, safe, and secure airspace access and integration for member UAS operations within U.S. National Airspace. Now that the organization is operational again, this body will allow the DOD to further advance its airspace operational initiatives.

FY 2024 Plans:

- Support unmanned system objectives of the DASD (Platform and Weapons Portfolio Management), Assistant Secretary of Defense (Acquisition); and Under Secretary of Defense (Acquisition and Sustainment).
- Support the DoD Co-Chair of the UAS Executive Committee, to include the Integration and Security Senior Steering Groups and the UAS Science and Research Panel (SARP).
- Support the OUSD(A&S) Co-Chair of the OSD UAS cyber-security Exception and Waiver Board.
- Support the OUSD(A&S) Co-Chair of the Joint Robotics and Autonomous System Enterprise (JRASE).
- Support development of unmanned and autonomous systems' roadmaps, concepts, standards, procedures, and policies.
- Support the processing of UAS cyber-security procurement and operations requests.
- Inform and guide development of the DoD's Blue Small UAS and Blue Architecture programs.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 443 / *Unmanned Systems Integration Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Inform and guide UAS integration decisions, programs, and test events. - Conduct unmanned systems related interagency coordination. - Support administrative and travel related cost associated with the unmanned system common development program. ***FY 2025 Plans:*** - Support unmanned system objectives of the DASD (Platform and Weapons Portfolio Management), Assistant Secretary of Defense (Acquisition); and Under Secretary of Defense (Acquisition and Sustainment). - Support the DoD Co-Chair of the UAS Executive Committee, to include the Integration and Security Senior Steering Groups and the UAS Science and Research Panel (SARP). - Support the OUSD(A&S) Co-Chair of the OSD UAS cyber-security Exception and Waiver Board. - Support the OUSD(A&S) Co-Chair of the Joint Robotics and Autonomous System Enterprise (JRASE). - Support development of unmanned and autonomous systems' roadmaps, concepts, standards, procedures, and policies. - Support the processing of UAS cyber-security procurement and operations requests. - Inform and guide development of the DoD's Blue Small UAS and Blue Architecture programs. - Inform and guide UAS integration decisions, programs, and test events. - Conduct unmanned systems related interagency coordination. - Support administrative and travel related cost associated with the unmanned system common development program. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no significant change between FY 2024 and FY 2025.			
Accomplishments/Planned Programs Subtotals	0.278	0.243	0.234

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	Project (Number/Name) 443 / *Unmanned Systems Integration Support*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Unmanned Systems Integration Support	C/CPFF	Various : Various	4.405	0.278		0.243		0.234		-		0.234	Continuing	Continuing	-
		Subtotal	4.405	0.278		0.243		0.234		-		0.234	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.405	0.278		0.243		0.234		-		0.234	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 443 / *Unmanned Systems Integration Support*

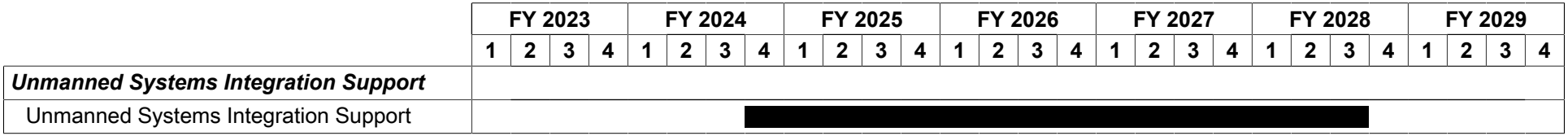


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604400D8Z / *Department of Defense (DoD) Unmanned Systems Common Development*	**Project (Number/Name)** 443 / *Unmanned Systems Integration Support*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Unmanned Systems Integration Support				
Unmanned Systems Integration Support	4	2024	3	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604555D8Z *I Operational Energy Capability Improvement - Non S&T*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	23.069	38.665	53.726	53.705	-	53.705	55.169	55.934	56.786	57.877	Continuing	Continuing
035: *Operational Energy Prototyping*	23.069	21.169	53.726	53.705	-	53.705	55.169	55.934	56.786	57.877	Continuing	Continuing
036: *Commanding Energy*	-	4.328	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
038: *Powering The Force*	-	5.798	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
054: *Electrifying The Battlespace*	-	7.370	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Operational Energy Capability Improvement—Non S&T (OECI-Non S&T) program is solely dedicated to addressing joint operational energy requirements and providing the solutions pipeline for integrating next-generation power and energy technology across current and emerging Department of Defense (DOD) operational platforms and weapon systems. Investments in OECI-Non S&T transition across multiples services, support current policy objectives, and inform future policy goals.

This program supports the Department's initiatives to build a sustainable long-term advantage for an interoperable, optimally powered, and resilient joint force. The OECI-Non S&T program accelerates transitions of operational energy technologies by more than two years. The program focuses on prioritizing first-of-a-kind successes that increase warfighting capabilities by reducing logistical demand and complexity, increasing commonality for interoperability and resilience, and ensures the warfighter has the energy and understanding to effectively use that power across all domains and levels of engagement.

OECI-Non S&T validates and demonstrates joint, high priority innovative, and cost-effective prototypes, technologies, and methods supporting DOD Operational Energy Strategy/National Defense Strategy addressing known capability gaps. The prototypes meet power and energy requirements mitigating contested logistics challenges through the reduction of operational energy demand and enabling enterprise-wide power and energy visibility.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604555D8Z *I Operational Energy Capability Improvement - Non S&T*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	45.779	53.726	58.489	-	58.489
Current President's Budget	38.665	53.726	53.705	-	53.705
Total Adjustments	-7.114	0.000	-4.784	-	-4.784
• Congressional General Reductions	-11.300	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	5.000	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.814	-			
• Defense-Wide Topline Adjustment	-	-	-4.784	-	-4.784

Change Summary Explanation

FY 2023 received congressionally requested reprogramming: (1) $5.0M increase for field-based airborne power generation systems. Directed investment was awarded on contract Sept 2023.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	Project (Number/Name) 035 / *Operational Energy Prototyping*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
035: *Operational Energy Prototyping*	23.069	21.169	53.726	53.705	-	53.705	55.169	55.934	56.786	57.877	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Operational Energy Capability Improvement—Non S&T (OECI-Non S&T) program is solely dedicated to addressing joint operational energy requirements and providing the solutions pipeline for integrating next-generation power and energy technology across current and emerging Department of Defense (DOD) operational platforms and weapon systems. Investments in OECI-Non S&T transition across multiples services, support current policy objectives, and inform future policy goals.

This program supports the Department's initiatives to build a sustainable long-term advantage for an interoperable, optimally powered, and resilient joint force. The OECI-Non S&T program accelerates transitions of operational energy technologies by more than two years. The program focuses on prioritizing first-of-a-kind successes that increase warfighting capabilities by reducing logistical demand and complexity, increasing commonality for interoperability and resilience, and ensures the warfighter has the energy and understanding to effectively use that power across all domains and levels of engagement.

OECI-Non S&T validates and demonstrates joint, high priority innovative, and cost-effective prototypes, technologies, and methods supporting DOD Operational Energy Strategy/National Defense Strategy addressing known capability gaps. The prototypes meet power and energy requirements mitigating contested logistics challenges through the reduction of operational energy demand and enabling enterprise-wide power and energy visibility.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: OECI-Non S&T	21.169	53.726	53.705
Description: The OECI-Non-S&T program successfully proved its value to the warfighter by: rapidly prototyping, demonstrating, quantifying and validating operational energy capabilities that accelerated transition. FY 2023 Accomplishments: Published the first Tactical Microgrid Standard (TMS) MIL-STD-3071) enabling acquisition of interoperable ground power systems. Developed a microgrid integration prototype testbed designed to accelerate integration with new energy technologies. Congressional Adds were awarded and on contract in FY 2023. These will be utilized to prototype a mobile wind-powered electrical generator platform optimized for operating in austere environments which reduces the energy re-supply risks and enhancing survivability and lethality in contested environments. ***FY 2024 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 035 / *Operational Energy Prototyping*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 competitively selected projects include: Energy resource software tool that provides near-real time visibility of US and NATO energy sources to support logistical and combat efforts in the EUCOM theater; Deployable autonomous refueling capability for forward deployed locations; solar cell production technology that will manufacture at an order of magnitude faster than current technologies and use less expensive sourced materials; tactical vehicles with on-board power that reduce the need for towed generators in the battle space; Standardized helicopter, space-based, and vehicle lithium ion batteries that will reduce acquisition costs across DOD; lithium Ion battery-safety technologies that can predict faults within the battery before they occur and eliminate incident propagation between battery cells; a hydrogen fuel cell hybrid UAS prototype that provides longer on-station time and reduces acoustic signatures; deployable energy storage system prototypes that provide high voltage power to forward deployed forces; and energy-sensing technology. Will continue to progress the mobile wind-powered electrical generation platform to transition to a service program of record.			
FY 2025 Plans: FY 2025 project projections include: Aviation efficiencies for propulsion system advances; Airframe designs with operational energy-benefit; Forward-operating refueling and re-powering capabilities; Ground-vehicle power and fuel optimization including optimal resupply in contested environments; Improved on-board power for use and distribution to warfighting systems; Power management for increased survivability (improved signature, anti-idle, and silent operations); Improved vehicle-to-vehicle/vehicle-to-grid microgrid fuel/power optimizations; Operational battery improvements for improving size, weight, safety, and extending reach and operating temperatures; and, Optimizing power and energy utilization in space. Each project will focus on requirements definition and support acquisition strategies ahead of transition to the Services' program offices. Modeling and simulation for each project will support analytical and cost decisions, providing documentation, and Futures' wargaming inputs. Complete the construction and demonstrate the mobile wind-powered electrical generation platform technology to warfighters and assist with transition to a program of record. Prioritize rapidly maturing nuclear operational energy projects for prototyping, demonstration, and validation OECI-Non S&T will continue to perform warfighter demonstrations at both CONUS and OCONUS locations and collect warfighter touchpoint database input to inform Requirements, acquisitions strategies, and validation analytics. This comprehensive approach will assist to accelerate transition of these advanced OE warfighting capabilities across the services.			
FY 2024 to FY 2025 Increase/Decrease Statement: The FY 2024 increase aligns with the growth in advanced technology maturation. With the planned additional funding, OECI-Non S&T will advance commercial Battery Cell standardization for Space and Aviation enabling significant and sustained cost reduction across the acquisition life-cycle, prototype tactical vehicle with a power-generating engine block that will reduce the needs for towed generators in the battle space; standardize helicopter, space-based and vehicle lithium ion batteries; prototype			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 035 / *Operational Energy Prototyping*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
deployable energy storage systems that provide high voltage power to forward deployed forces. Given additional funding, OECI-Non S&T would also expedite the transition of Hydrogen fuel diversification across the battlespace.			
Accomplishments/Planned Programs Subtotals	21.169	53.726	53.705

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

Operational Energy Capability Improvement—Non S&T (OECI-Non S&T) works with service-specific programs of record (PORs) to ensure funded projects are integrated into their acquisition strategies. The ASD(EI&E) approach integrates across the entire Joint OE community to ensure that Joint Forces have the energy needed to fight and win in contested environments. ASD(EI&E) collaborations include the Service energy offices, other DoD innovation programs (including Defense Innovation Unit), Combatant Commands, Defense Department laboratories, industry and academia.

Each year, the Combatant Commanders (i.e. USINDOPACOM) and the Services Program Executive Offices (PEO) (i.e. PEO Combat Support and Combat Service Support (CS&CSS)) propose projects that will have an impact to the warfighter. Power and energy candidates are ranked by their attributes for warfighter impact and ease of integration into a program of record. The most impactful projects are funded.
OECI-Non S&T has transitioned the following technology:
- Tactical Microgrid Standard (TMS) transitioned to Military Standard (MIL-STD-3071). The Army Joint Program Office for Expeditionary Energy and Sustainment Systems (PM E2S2) implemented this MIL-STD on USMC Small Tactical Electric Power (STEP) for deployable small generators.
- ULTRA Unmanned Aerial Ship (UAS) – Engine Control Unit (ULTRA UAS ECU) provided its optimized fuel injection and spark ignition timing maps to AFRL/RQTC for integration into UAS currently being flown on missions for COCOMs. UAS upgraded with this new ULTRA UAS ECU delivers longer on-station times due to efficient engine controls and less fuel costs. The technology was integrated into a Program of Record under PE 0305205F / Endurance Unmanned Aerial Vehicles.
- Tactical Vehicle Hybridization (TVH) transitioned to the Army's Family of Medium Tactical Vehicles under PE 0604604A. TVH leveraged the DIU rapid procurement with Industry for the prototype development. The program office plans to retrofit over 100,000 vehicles with this technology.
- Dynamic Hydride Vapor Phase Epitaxy (D-HVPE) project doubled the nationwide production of High-Efficiency Photovoltaics. National Renewable Energy Laboratory (NREL), Air Force, and Space Force Program Offices are licensing innovative and cost effective photovoltaic production methods with companies and venture capitalists to increase the domestic industrial base.
- Space to Space Power Beaming prototype transitioned to Air Force Research Lab (AFRL) RXSC for a one year orbital operational test of this capability. Launch, scheduled for FY 2025, will confirm the feasibility of satellite-to-satellite power recharging, extending the effective life of the satellite.
- The capability to meter and monitor energy transitioned the global logistic awareness technology to the Marine Corps CD&I and 3rd MLR. Combatant commanders can remotely manage the logistics of deployed energy and power assets across their area of responsibility.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 035 / *Operational Energy Prototyping*

- Sensors for energy monitoring and predictive maintenance were demonstrated with the Army PM-E2S2/C5ISR and the Navy's NAVSEA/NSWC and NAVFAC and transitioned to Navy Aegis Destroyers for immediate integration into shipboard power monitoring.
- Tether power sources that leverage renewable wind energy will contribute to addressing Marine Corps Installation and Logistics Futures power requirements for the austere environments for Marine Corps forward stations and bases.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 035 / *Operational Energy Prototyping*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/IDDQ	TBD : TBD	1.200	2.400		2.400		2.400		-		2.400	Continuing	Continuing	-
		Subtotal	1.200	2.400		2.400		2.400		-		2.400	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	C/TBD	Various : Various	21.869	18.769		51.326		51.305		-		51.305	Continuing	Continuing	-
		Subtotal	21.869	18.769		51.326		51.305		-		51.305	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.069	21.169		53.726		53.705		-		53.705	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 035 / *Operational Energy Prototyping*

Schedule Details

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Develop Program				
Develop FY 2022 Program	3	2021	1	2022
In Progress Reviews				
FY 2023 In Progress Reviews	2	2023	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	Project (Number/Name) 036 / *Commanding Energy*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
036: *Commanding Energy*	-	4.328	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the OEP is to fund warfighter prototyping, demonstration, and transition that will improve DOD operational effectiveness. As Defense-Wide funding it promotes long term change in DOD capabilities so they are better aligned with the Operational Energy Strategy.

OEP fosters non-S&T innovation to improve operational energy performance and has two key mission aspects. First, to ruggedize, demonstrate, and transition into use operational energy technologies and practices that will improve DOD military capabilities, resiliency, and/or reduce costs. Second, to establish within the military Services sustainable, institutional capability to continue to develop and adopt operational energy innovations.

OEP serves as the program by which operational energy technology advances made under the Operational Energy Capability Innovation program (OECI) can transition to military service acquisition programs without delay and loss of momentum. Transition plans for each successful prototype will be established to ensure that components have time to plan, program, and budget for technology transition to programs of record. Demand for this program is greater than 4 times the funding available ensuring the most competitive programs are awarded to move forward.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Commanding Energy	4.328	-	-
Description: Operational Energy Prototyping (OEP) continues to identify and demonstrate the most promising, innovative, and cost-effective technologies and methods that address joint high-priority operational energy requirements. OEP solicits proposals from across the DOD and competitively awards projects based on OE impact and programmatic transition. Warfighter feedback is obtained through limited technical assessment, static demonstration, and participation in formal exercises. Transition plans are established for each prototype to ensure support for requirements and acquisition programs of record. OEP invests in prototyping, validations, and demonstrations in four focus areas: (1) support prototype development of new operational energy technologies, (2) carry out formal demonstrations at installations or in conjunction with exercises conducted by the Joint Staff, a combatant command, or a military department, (3) collect cost and performance data to overcome barriers against employing an innovative technology because of concerns regarding technical or programmatic risk, and (4) provide the tools and analysis that quantifies the mission impact of these new technologies.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 036 / *Commanding Energy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Commanding Energy - Automated Fuel Reporting and Deployable Metering and Monitoring transitions networked knowledge of energy resources, usage, and combat needs; Tactical Microgrid Standard transitions to the Army and USMC acquisitions offices enabling efficient and optimal energy use across the battlespace; Enhancing energy tools for warfighter mission planning. FY 2023 Accomplishments: In November 2023, OECI-Non S&T delivered a warfighter feedback capability tool during a technology demonstration at Camp Pendleton. The Warfighter Touchpoint Database tool gathers real-time feedback that is shared with government and industry partners to improve the technology and promote accountability and transparency of changes to Requirements, acquisition strategies, and validation analytics. Successfully demonstrated reduced fuel consumption by at least 6% in unmanned aircraft over the Artic Ocean in 4-16 Sep 2023. Demonstrated at Combatant Command locations advanced energy metering and monitoring sensors and tools that provide energy awareness at all echelons.			
Accomplishments/Planned Programs Subtotals	4.328	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 036 / *Commanding Energy*

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 036 / *Commanding Energy*

Schedule Details

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Develop Program				
Develop FY 2022 Program	3	2021	1	2022
In Progress Reviews				
FY 2023 In Progress Reviews	2	2023	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 036 / *Commanding Energy*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
In Progress Reviews				
FY 2023 in Progress Reviews	2	2023	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	Project (Number/Name) 038 / *Powering The Force*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
038: *Powering The Force*	-	5.798	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the OEP is to fund warfighter prototyping, demonstration, and transition that will improve DOD operational effectiveness. As Defense-Wide funding it promotes long term change in DOD capabilities so they are better aligned with the Operational Energy Strategy.

OEP fosters non-S&T innovation to improve operational energy performance and has two key mission aspects. First, to ruggedize, demonstrate, and transition into use operational energy technologies and practices that will improve DOD military capabilities, resiliency, and/or reduce costs. Second, to establish within the military Services sustainable, institutional capability to continue to develop and adopt operational energy innovations.

OEP serves as the program by which operational energy technology advances made under the Operational Energy Capability Innovation program (OECI) can transition to military service acquisition programs without delay and loss of momentum. Transition plans for each successful prototype will be established to ensure that components have time to plan, program, and budget for technology transition to programs of record. Demand for this program is greater than 4 times the funding available ensuring the most competitive programs are awarded to move forward.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Powering The Force	5.798	-	-
Description: Operational Energy Prototyping (OEP) continues to identify and demonstrate the most promising, innovative, and cost-effective technologies and methods that address joint high-priority operational energy requirements. OEP solicits proposals from across the DOD and competitively awards projects based on OE impact and programmatic transition. Warfighter feedback is obtained through limited technical assessment, static demonstration, and participation in formal exercises. Transition plans are established for each prototype to ensure support for requirements and acquisition programs of record. OEP invests in prototyping, validations, and demonstrations in four focus areas: (1) support prototype development of new operational energy technologies, (2) carry out formal demonstrations at installations or in conjunction with exercises conducted by the Joint Staff, a combatant command, or a military department, (3) collect cost and performance data to overcome barriers against employing an innovative technology because of concerns regarding technical or programmatic risk, and (4) provide the tools and analysis that quantifies the mission impact of these new technologies. Powering the Force – Uncrewed Aerial Vehicle technology transition increases mission on-station time and energy savings with positive climate impact; on-orbit demonstration of wireless power transfer.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 038 / *Powering The Force*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2023 Accomplishments: Doubled nation-wide US production capability and reduced production costs by up to 50% of high-efficiency photovoltaic solar cells with first-of-a-kind prototype growth reactor. Validated increased range and duration of Unmanned Aerial Vehicles (UAV) while reducing energy demand through utilizing power and energy from photovoltaic wings, fuel cell applications, and engine efficiency improvements.			
Accomplishments/Planned Programs Subtotals	5.798	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 038 / *Powering The Force*

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 038 / *Powering The Force*

Schedule Details

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Develop Program				
Develop FY 2022 Program	3	2021	1	2022
In Progress Reviews				
FY 2023 In Progress Reviews	2	2023	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 038 / *Powering The Force*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
In Progress Reviews				
FY 2023 in Progress Reviews	2	2023	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	Project (Number/Name) 054 / *Electrifying The Battlespace*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
054: *Electrifying The Battlespace*	-	7.370	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the OEP is to fund warfighter prototyping, demonstration, and transition that will improve DOD operational effectiveness. As Defense-Wide funding it promotes long term change in DOD capabilities so they are better aligned with the Operational Energy Strategy.

OEP fosters non-S&T innovation to improve operational energy performance and has two key mission aspects. First, to ruggedize, demonstrate, and transition into use operational energy technologies and practices that will improve DOD military capabilities, resiliency, and/or reduce costs. Second, to establish within the military Services sustainable, institutional capability to continue to develop and adopt operational energy innovations.

OEP serves as the program by which operational energy technology advances made under the Operational Energy Capability Innovation program (OECI) can transition to military service acquisition programs without delay and loss of momentum. Transition plans for each successful prototype will be established to ensure that components have time to plan, program, and budget for technology transition to programs of record. Demand for this program is greater than 4 times the funding available ensuring the most competitive programs are awarded to move forward.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Electrifying The Battlespace	7.370	-	-
Description: Operational Energy Prototyping (OEP) continues to identify and demonstrate the most promising, innovative, and cost-effective technologies and methods that address joint high-priority operational energy requirements. OEP solicits proposals from across the DOD and competitively awards projects based on OE impact and programmatic transition. Warfighter feedback is obtained through limited technical assessment, static demonstration, and participation in formal exercises. Transition plans are established for each prototype to ensure support for requirements and acquisition programs of record. OEP invests in prototyping, validations, and demonstrations in four focus areas: (1) support prototype development of new operational energy technologies, (2) carry out formal demonstrations at installations or in conjunction with exercises conducted by the Joint Staff, a combatant command, or a military department, (3) collect cost and performance data to overcome barriers against employing an innovative technology because of concerns regarding technical or programmatic risk, and (4) provide the tools and analysis that quantifies the mission impact of these new technologies. Electrifying the Battlespace – Enabling greater industry participation and rapid acquisition of tactical vehicle hybridization and electrification technologies by increasing the types and numbers of tactical vehicles with electric prototypes.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 054 / *Electrifying The Battlespace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2023 Accomplishments: Prototyped an energy- saving anti-idle, silent watch/silent mobility vehicle that reduces petroleum demand by 20% and extends dismounted warfighter non-refueled operations from 3 days to 5 days.			
Accomplishments/Planned Programs Subtotals	7.370	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 054 / *Electrifying The Battlespace*

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 054 / *Electrifying The Battlespace*

Schedule Details

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Develop Program				
Develop FY 2022 Program	3	2021	1	2022
In Progress Reviews				
FY 2023 In Progress Reviews	2	2023	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 054 / *Electrifying The Battlespace*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
In Progress Reviews				
FY 2023 in Progress Reviews	2	2023	4	2023

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604669D8Z / *Microelectronics Commons*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	65.682	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
832: *Microelectronics Research Maturation – Advanced Prototyping*	0.000	65.682	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

Note

New Start (Y/N): No

FY 2023 funding of $65.682 million was transferred from the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Defense Fund to the FY 2023 Research, Development, Test and Evaluation, Defense-Wide appropriation for proper execution. The funds were appropriated by, and are transferred using special transfer authority provided by, section 102(b) of the CHIPS Act of 2022, division A of Public Law 117–167.

A. Mission Description and Budget Item Justification

This Program Element supports the Department's initiatives to Build Sustainable and Long-Term Advantage, Defend the Homeland, and Deter Aggression.

The Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) is executing the Microelectronics Commons (the Commons) activity pursuant to the Fiscal Year (FY) 2021 National Defense Authorization Act (NDAA) (Pub. L. 116-283), including the CHIPS for America Act, and funded through the CHIPS for America Defense Fund established by the CHIPS Act of 2022. The FY 2021 NDAA legislation significantly emphasized solutions that promote the domestic on-shoring of capabilities to address economic and technology security concerns. Under FY 2021 NDAA Sec. 9903(b), the DOD was directed to establish a National Network for Microelectronics Research and Development (NNMRD) to enable the laboratory-to-fabrication transition of microelectronics innovations in the United States and to expand the global leadership in microelectronics of the United States. Specifically, the DOD is addressing a component of the NNMRD, the Commons, through a public-private partnership consisting of regional innovation hubs distributed across the U.S. to foster a pipeline of innovative ideas and talent residing in, for example, university labs and small business R&D teams.

Background

U.S. technological dominance in microelectronics materials, processes, devices, and architectural designs can only be sustained through the development of a robust domestic innovation ecosystem that fosters the rapid development and transition of novel concepts into commercially viable manufacturing processes. The U.S. innovation ecosystem has long been the driver of our nation’s technology leadership throughout the world. U.S. R&D kick-started the enormous semiconductor industry and continues to lead the world in developing the next generation of disruptive technologies including new materials, devices, circuits, architectures, and design tools.

In recent years, the efficient domestic adoption of U.S. chip innovation has been threatened as emerging hardware technologies have become increasingly reliant on offshore sources for State of the Art (SOTA) manufacturing, prototyping, and investment. There are several significant hurdles that hardware startups face, including limited or expensive access to necessary facilities and design infrastructure, high costs of design intellectual property, limited expertise with hardware engineering, and

high costs of prototyping. As a result, the number of U.S. hardware startups has dropped significantly and foreign investment in U.S.-based technology startups has enabled offshore fabrication and maturation of emerging technologies.

To address these needs, OUSD(R&E) is standing up the Commons as a public private partnership, consisting of regional innovation hubs distributed across the U.S. to foster a pipeline of innovative ideas and talent residing in university labs and small business R&D teams. The partnership will provide resources for and access to specialized lab equipment, technical expertise, and connections to existing or upgraded prototyping facilities. Fabrication facilities (fabs) will help mature promising technologies and demonstrate the manufacturing and economic benefits of these innovations for dual-use application for defense and commercial sectors.

The Commons focuses on critical, on-shore prototyping to transition innovation from universities, start-ups, and small companies to fabrication facilities (lab-to-fab transition). Key features include:
• Creates and connects “Lab-to-Fab” testing/prototyping hubs to form a network focused on maturing emerging microelectronics technologies
• Provides broad access to these prototyping hubs, potentially by augmenting facilities and enabling access to facilities within local semiconductor companies or FFRDCs.
• Facilitates microelectronics education and training of students at local colleges and universities and grows a talent pipeline to bolster local semiconductor economies and contribute more broadly to the growth of a domestic semiconductor workforce.

This program element focuses on the advanced component development and advanced prototyping activities of the Commons, including staffing at Commons Hub facilities, prototype development, and the establishment and development of a path for successful Lab-to-Fab technology transition. The Commons will establish early and sustained engagement with industry and academic stakeholders to build consensus on technology roadmaps to guide maturation and delivery of innovation into a given commercial fab’s pilot line and production plans.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	65.682	0.000	0.000	-	0.000
Total Adjustments	65.682	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Programmatic transfer from DoD Appropriation 0403D	65.682	-	-	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604669D8Z / *Microelectronics Commons*

Change Summary Explanation

FY 2023 funding of $65.682 million was transferred from the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Defense Fund to the FY 2023 Research, Development, Test and Evaluation, Defense-Wide appropriation for proper execution. The funds were appropriated by, and are transferred using special transfer authority provided by, section 102(b) of the CHIPS Act of 2022, division A of Public Law 117–167.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604669D8Z / *Microelectronics Commons*	Project (Number/Name) 832 / *Microelectronics Research Maturation – Advanced Prototyping*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
832: *Microelectronics Research Maturation – Advanced Prototyping*	0.000	65.682	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

FY 2023 funding of $65.682 million was transferred from the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Defense Fund to the FY 2023 Research, Development, Test and Evaluation, Defense-Wide appropriation for proper execution. The funds were appropriated by, and are transferred using special transfer authority provided by, section 102(b) of the CHIPS Act of 2022, division A of Public Law 117–167.

A. Mission Description and Budget Item Justification

This project focuses on advanced prototyping activities of the Commons. Additionally, it focuses on providing cost-effective ways to capture and incentivize domestic R&D for various semiconductor technologies in a low-volume production environment and transition them for DOD and commercial market applications. Specifically, it works to transition developments from Commons Hubs resulting from technology identification and research funded by Commons PEs 0602669D8Z and matured by activities funded by Commons PE 0603669D8Z. The project also supports the establishment of the Commons Hubs, which will be networks of regional capabilities organized in collaboration with the CM to address DoD and commercial needs and requirements. The Hubs may include existing academic facilities augmented to enhance intrinsic specializations in emerging areas of microelectronics. Each Hub will concentrate on one of six technical areas including: Secure Edge Computing, 5G/6G Technology, Artificial Intelligence Hardware, Quantum Technology, Electromagnetic Warfare, and Commercial Leap Ahead Technologies. Core Facilities (i.e., fabs) are integral parts of the Hubs network that will provide key fabrication capabilities that are required to demonstrate prototypes with the volume and characteristics required to ensure reduced risk for full manufacturing production.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Microelectronics Research Maturation – Advanced Prototyping	65.682	0.000	0.000
Description: This effort focuses on the advanced prototyping of promising new microelectronics technologies and enabling the transition of these technologies into fabrication processes that ensure reduced risk for insertion into DOD Programs and commercial applications. It will also support operation of regional Commons Hubs and initial selection and execution of Commons Projects in conjunction with activities funded by PEs 0602669D8Z and 0603669D8Z.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604669D8Z / *Microelectronics Commons*	**Project (Number/Name)** 832 / *Microelectronics Research Maturation – Advanced Prototyping*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Select initial Commons Projects to be executed by the Hubs; advanced prototyping efforts for new microelectronics technologies with potential DOD or dual-use applications • Execution of Hubs – access to prototyping capabilities and development of the semiconductor talent pipeline. • Facilitate transition of novel concepts matured in a low-volume production environment into commercially viable high-volume manufacturing processes. ***FY 2025 Plans:*** • Select the FY 2025 Commons Projects to be executed by the Hubs; advanced prototyping efforts for new microelectronics technologies with potential DOD or dual-use applications • Execution of Hubs – access to prototyping capabilities and development of the semiconductor talent pipeline. • Execution of FY 2024 Commons Projects; advanced prototyping efforts for new microelectronics technologies with potential DOD or dual-use applications • Continue to facilitate transition of novel concepts matured in a low-volume production environment into commercially viable high-volume manufacturing processes.			
Accomplishments/Planned Programs Subtotals	65.682	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604669D8Z / *Microelectronics Commons*	**Project (Number/Name)** 832 / *Microelectronics Research Maturation – Advanced Prototyping*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Microelectronics Research Maturation – Advanced Prototyping	C/Various	Air Force, Army, Navy: Various : Various	-	65.682	Mar 2023	0.000		0.000		0.000		0.000	Continuing	Continuing	-
		Subtotal	-	65.682		0.000		0.000		0.000		0.000	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	65.682		0.000		0.000		0.000		0.000	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604669D8Z / *Microelectronics Commons*	**Project (Number/Name)** 832 / *Microelectronics Research Maturation – Advanced Prototyping*

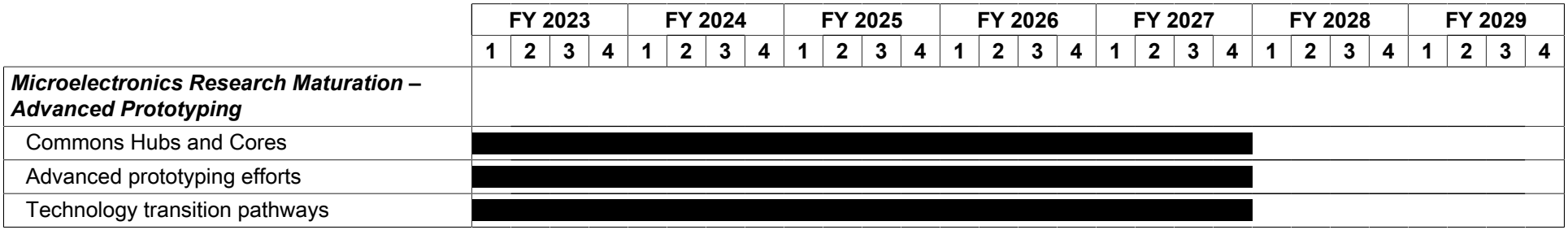


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604669D8Z / *Microelectronics Commons*	**Project (Number/Name)** 832 / *Microelectronics Research Maturation – Advanced Prototyping*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Microelectronics Research Maturation – Advanced Prototyping				
Commons Hubs and Cores	1	2023	4	2027
Advanced prototyping efforts	1	2023	4	2027
Technology transition pathways	1	2023	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604682D8Z / *Wargaming & Support for Strategic Analysis (SSA)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	21.395	2.711	3.206	3.559	-	3.559	3.397	3.500	3.582	3.653	-	-
104: *Wargaming & Support for Strategic Analysis*	21.395	2.711	3.206	3.559	-	3.559	3.397	3.500	3.582	3.653	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression, Defend the Homeland, and Build Sustainable and Long-Term Advantage.

This program supports the Office of the Director, Cost Assessment & Program Evaluation (CAPE) by funding activities that help CAPE to implement warfighting analysis in support of the National Defense Strategy (NDS). The CAPE accomplishes this by leading studies to support campaign analysis and analytical research across a spectrum of national security issues and concerns.

These RDT&E resources support critical studies and analyses to assist senior DoD leaders in optimally balancing the lethality, partnership, and reform levels of effort to carry out the NDS. The research agenda focuses on near to long-term problems identified by the Deputy Secretary of Defense, and addresses difficult and complex questions linked to program alternatives for current and future capabilities and forces in order to enhance the senior leadership's deliberations and decision-making.

This program provides the scientific and technical engineering services needed for research studies in the development of models and simulations and the evaluation of current analytical tools and scientific methods used to evaluate and assess scenarios and concepts of operations for a wide range of warfighting environments and scenarios. Deliverables from this program will include reports, briefings, and analyses designed to illuminate findings and assessments to inform Operation Plan development and DoD's approach to concept development, joint campaign analysis, evaluation, and force development.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604682D8Z / *Wargaming & Support for Strategic Analysis (SSA)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	2.711	3.206	3.559	-	3.559
Current President's Budget	2.711	3.206	3.559	-	3.559
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

No change in FY 2025 from previous PB.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604682D8Z / *Wargaming & Support for Strategic Analysis (SSA)*	Project (Number/Name) 104 / *Wargaming & Support for Strategic Analysis*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
104: *Wargaming & Support for Strategic Analysis*	21.395	2.711	3.206	3.559	-	3.559	3.397	3.500	3.582	3.653	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program supports the Office of the Director, Cost Assessment & Program Evaluation (CAPE). It funds activities that help CAPE to implement the vision of the Deputy Secretary of Defense to support new approaches to campaign analysis. CAPE will accomplish this by leading studies and developing analytic tools to think about future capabilities and posture.

This program provides for analytical research across a spectrum of issues and concerns. The research agenda is focused on near to long-term problems identified by the Deputy Secretary of Defense, and addresses difficult and complex questions linked to program alternatives for current and future capabilities and forces in order to enhance the senior leadership's deliberations and decision-making.

This program provides the scientific and technical engineering services needed for research studies in the development of models and simulations and the evaluation of current analytical tools and scientific methods used to evaluate and assess future scenarios and concepts of operations for a wide range of warfighting environments and scenarios. Deliverables from this program will include reports, briefings, and analyses designed to illuminate findings and assessments. Outcomes include the compilation and campaign analyses data to support the DoD capabilities to the challenges of a near-peer warfight and strategic and programmatic options for post INF treaty weapons options.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Wargaming & Support for Strategic Analysis	2.711	3.206	3.559
Description: This program provides for analytical research across a spectrum of issues and concerns. The research agenda is focused on near to long-term problems identified by the Deputy Secretary of Defense, and addresses difficult and complex questions linked to program alternatives for current and future capabilities and forces in order to enhance the senior leadership's deliberations and decision-making.			
FY 2024 Plans: Studies, analyses, and assessments will be focused on: - Developing and refining warfighting objectives from senior leader priorities and Strategic Support Analysis activities - Overseeing concept, analysis, and force design work - Providing guidance to DoD on best practices for Service Concepts and long range fires decision			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604682D8Z / *Wargaming & Support for Strategic Analysis (SSA)*	**Project (Number/Name)** 104 / *Wargaming & Support for Strategic Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Analytic Working Group initiatives to comprehensively assess, recommend, and oversee execution of enterprise reforms necessary to improve the Department's ability to analytically advance the Secretary's priorities ***FY 2025 Plans:*** Studies, analyses, and assessments will be focused on: - Developing and refining warfighting objectives from senior leader priorities and Strategic Support Analysis activities - Overseeing concept, analysis, and force design work - Providing guidance to DoD on best practices for Service Concepts and long range fires decision - Analytic Working Group initiatives to comprehensively assess, recommend, and oversee execution of enterprise reforms necessary to improve the Department's ability to analytically advance the Secretary's priorities ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 slight increase will continue to fund a mix of research activities and carry out the FY 2025 plans as stated above.			
Accomplishments/Planned Programs Subtotals	2.711	3.206	3.559

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

A mix of competitive contracts with commercial firms and research provided by university-affiliated research centers (UARCs), and Federally Funded Research and Development Centers (FFRDCs).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604682D8Z / *Wargaming & Support for Strategic Analysis (SSA)*	Project (Number/Name) 104 / *Wargaming & Support for Strategic Analysis*	

Product Development ($ in Millions)

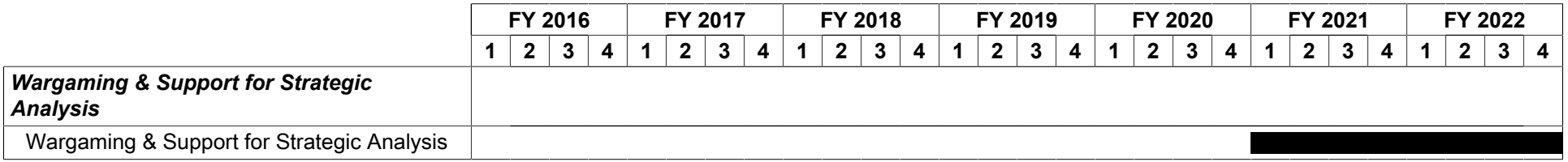
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Wargaming & Support for Strategic Analysis	C/Various	Various : DC Metro Area	21.395	2.711		3.206		3.559		-		3.559	Continuing	Continuing	N/A
		Subtotal	21.395	2.711		3.206		3.559		-		3.559	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.395	2.711		3.206		3.559		-		3.559	Continuing	Continuing	N/A

Remarks

The CAPE will accomplish this program by leading warfighting analysis, mission engineering threads, and analysis of concepts of operations. Funds will be awarded for high-priority projects based on competition, and the awards will include analysis of proposed costs.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604682D8Z / *Wargaming & Support for Strategic Analysis (SSA)*	**Project (Number/Name)** 104 / *Wargaming & Support for Strategic Analysis*



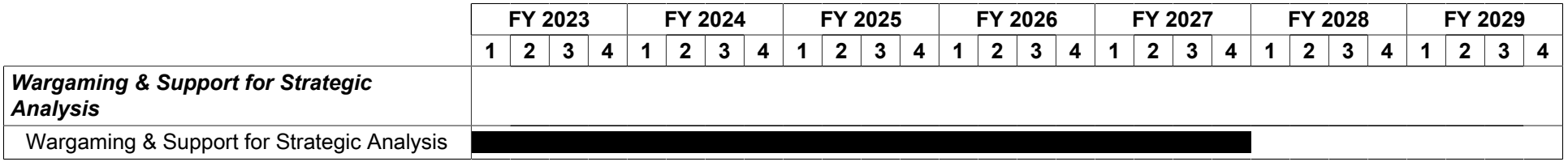


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604682D8Z / *Wargaming & Support for Strategic Analysis (SSA)*	**Project (Number/Name)** 104 / *Wargaming & Support for Strategic Analysis*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Wargaming & Support for Strategic Analysis				
Wargaming & Support for Strategic Analysis	1	2021	4	2027

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604775D8Z / *Defense Rapid Innovation Program*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	499.432	0.000	0.000	10.020	0.000	10.020	10.019	10.016	10.016	10.016	Continuing	Continuing
775: *Rapid Integrated Scalable Enterprise (RISE)*	499.432	0.000	0.000	10.020	0.000	10.020	10.019	10.016	10.016	10.016	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Rapid Innovation Program better known as the Rapid Integrated Scalable Enterprise (RISE) Program was established in Section 1073 of the FY 2011 National Defense Authorization Act (NDAA) and authorized as a permanent program in the FY 2017 NDAA. The RISE Program accelerates the transition, integration, and commercialization of innovative technologies into military systems via a competitive, merit-based selection process. Technology innovations are drawn from Phase II Small Business Innovative Research (SBIR) projects, defense laboratory and academia efforts, and other innovative technologies, including dual-use and Independent Research & Development (IRAD) technologies. Projects stimulate innovation, mitigate technical risks, reduce acquisition and/or lifecycle costs, improve test outcomes, and rapidly insert technology into major acquisition programs and other programs that meet critical national security needs. RISE provides a mechanism for bridging the "Valley of Death" by funding the integration work vital to transition technologies out of the laboratory and into Programs of Record. RISE is designed to rapidly transition these technologies to resolve operational challenges and address national security needs established by the National Defense Strategy and DoD, such as the US 14 Critical Technology Areas (CTAs) and Reliance 21. Since inception, RISE has evaluated over 18,000 industry submitted white papers and funded nearly 1,000 projects with companies from 43 different states across the 30 different organizations in the Military Services, Combatant Commands, and other Defense Agencies.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	10.020	-	10.020
Total Adjustments	0.000	0.000	10.020	-	10.020
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Realignment from Procurement, Defense-Wide, OSD Major Equipment, Line 30	0.000	0.000	10.020	-	10.020

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604775D8Z / *Defense Rapid Innovation Program*

Change Summary Explanation

FY 2025 $10.000 million funding is a realignment from the Indian Incentive Procurement Program of the Office of Secretary of Defense (OSD) Major Equipment, Line 30, in order to provide a funding source and execute the program transferred from the Office of Under Secretary of Defense for Research and Engineering (OUSD(R&E)) to the Office of Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S)).

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604775D8Z / *Defense Rapid Innovation Program*	Project (Number/Name) 775 / *Rapid Integrated Scalable Enterprise (RISE)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
775: *Rapid Integrated Scalable Enterprise (RISE)*	499.432	0.000	0.000	10.020	0.000	10.020	10.019	10.016	10.016	10.016	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

From FY 2011 thru FY 2019, the Defense Rapid Innovation Program better known as the Rapid Integrated Scalable Enterprise (RISE) Program has been funded through Congressional Adds.

RISE funds are distributed between the Services (Army, Navy, and Air Force) and the other Defense agencies. RISE is executed via a competitive two-step process for participation in the program. Industry is invited to submit brief white papers plus a quad chart through an annual Broad Agency Announcement. Once white papers have been reviewed, the highest-ranking white papers are invited to submit full detailed proposals for funding consideration. In ranking white papers, preference will be given to projects focusing on the Research and Engineering top 10 research priorities, the National Defense Strategy, and small businesses. Full proposals are subject to final review and the highest-ranking proposals are selected for contract award. The statute for RISE defines project scope as not to exceed 36 months and $6.000 million per project..

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Rapid Integrated Scalable Enterprise (RISE) Projects	0.000	0.000	10.020
Description: Industry is invited to submit brief white papers and quad chart through an annual Broad Agency Announcement. Once white papers have been reviewed, the highest-ranking white papers are invited to submit full detailed proposals for funding consideration. In ranking white papers, preference will be given to projects focusing on the Research and Engineering top 10 research priorities, the National Defense Strategy, and small businesses. Full proposals are subject to final review and the highest-ranking proposals are selected for contract award.			
FY 2024 Plans: N/A			
FY 2025 Plans: Requirements consolidation. Broad Agency Announcement and evaluation of proposals. Proposal selection and approval of RISE projects. Projects initiated, executed, and transitioned to various Services and Defense Agencies Programs of Record.			
FY 2024 to FY 2025 Increase/Decrease Statement: The increase of $10.000 million from FY 2024 to FY 2025 is due to the realignment from the Indian Incentive Procurement Program of the Office of Secretary of Defense (OSD) Major Equipment in order to provide a funding source and execute the			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604775D8Z / *Defense Rapid Innovation Program*	**Project (Number/Name)** 775 / *Rapid Integrated Scalable Enterprise (RISE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
program transferred from the Office of Under Secretary of Defense for Research and Engineering (OUSD(R&E)) to the Office of Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S)).			
Accomplishments/Planned Programs Subtotals	0.000	0.000	10.020

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Successful RISE projects can transition to acquisition via several ways including, but not limited to technology upgrade insertion into a current platform or program providing greater capability or prolonging the life of the weapon system; informing/refining future requirements providing better outcomes for planned systems, or a direct transition/procurement should the item/article provide a new capability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604775D8Z / *Defense Rapid Innovation Program*	Project (Number/Name) 775 / *Rapid Integrated Scalable Enterprise (RISE)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RIF Project Awards	C/Various	Multiple : Multiple	490.944	-		0.000		9.820		0.000		9.820	Continuing	Continuing	-
		Subtotal	490.944	-		0.000		9.820		0.000		9.820	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Intramural Support Costs	MIPR	Army, Navy, and Air Force : Multiple	6.913	0.000		0.000		0.000		0.000		0.000	Continuing	Continuing	-
		Subtotal	6.913	0.000		0.000		0.000		0.000		0.000	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RIF Program Support Services and Portal Costs	C/Various	Multiple : Multiple	1.575	0.000		0.000		0.200		0.000		0.200	Continuing	Continuing	-
		Subtotal	1.575	0.000		0.000		0.200		0.000		0.200	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	499.432	0.000		0.000		10.020		0.000		10.020	Continuing	Continuing	N/A

Remarks

Administrative costs for executing RISE, program-wide, are two percent of the total appropriation per fiscal year.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604775D8Z / *Defense Rapid Innovation Program*	**Project (Number/Name)** 775 / *Rapid Integrated Scalable Enterprise (RISE)*

Schedule Details

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Develop Program				
Develop FY 2022 Program	3	2021	1	2022
In Progress Reviews				
FY 2023 In Progress Reviews	2	2023	4	2024

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	24.033	79.773	53.149	-	53.149	76.976	79.964	81.707	83.340	Continuing	Continuing
790: *Rapid Defense Experimentation Reserve (RDER)*	0.000	24.033	79.773	53.149	-	53.149	76.976	79.964	81.707	83.340	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Rapid Defense Experimentation Reserve (RDER) program supports core program management and integration activities necessary to plan and execute a multi-year campaign of experimentation. The RDER initiative is a whole of DoD effort focused on joint experimentation to provide rapid capabilities that address our most difficult military challenges. The Secretary of Defense established the RDER initiative in the Defense Planning Guidance for Fiscal Years 2024-2028, to enable multi-component experimentation through a campaign of learning that accelerates technology transition and scale-up with the Services through the Deputy's Management Action Group. This experimentation is executed using validated mission vignettes to assess Measures of Effectiveness and Measures of Performance identified in Modeling and Simulation. Integrated Assessment plans are developed for each prototype in the experiment and the data is collected through a campaign of experimentation utilizing Service demonstration venues or Combatant Command Training Exercises such as Project Capstone or Northern Edge/Valiant Shield respectively. The final prototype assessment will consist of a body of evidence that consists of Modeling and Simulation data, range or exercise performance, and doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMPLF) issues. The assessment will drive a Department decision point for transition or acceleration of RDER projects.

The Office of the Under Secretary of Defense for Research and Engineering OUSD(R&E) process for incubating promising prototypes starts with a novel experimental design based on a web of interconnected systems addressing specific Defense Planning Scenarios. This approach is unique from other experimentation that focuses on determining individual system efficacy. Additionally, the experimental design is unique in using the web of systems to explore new warfighting concepts that capitalize on contributions of multiple Services as a true joint force. The experimentation yields live data which is evaluated to depict system operational analysis against the predicted performance from modeling and simulation. The Operational Utility Assessment establishes the body of evidence for the "best of breed" and the rapid adaptation of the capability by the Services.

OUSD(R&E) manages the Department's multiple RDER experimentation events and conducts integration activities with the Joint Force. OUSD(R&E) recommends new projects, reviews project progress, and incorporates the most promising innovative prototypes into existing exercise venues such as: Project Capstone, Northern Edge, Valiant Shield, Talisman Sabre, Grey Flag, Joint Battle Problem, and TREX. RDER utilizes funding to plan, integrate, and oversee joint experiments; provide assessments on project viability; and, deliver results to facilitate decisions on transitioning promising capabilities with the Services.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604790D8Z *I Rapid Defense Experimentation Reserve (RDER)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	24.758	79.773	73.671	-	73.671
Current President's Budget	24.033	79.773	53.149	-	53.149
Total Adjustments	-0.725	0.000	-20.522	-	-20.522
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.723	-			
• Cancelled Account	-0.002	-	-	-	-
• Program Adjustments	-	-	-20.522	-	-20.522

Change Summary Explanation

FY 2023 change in Current President's Budget from Previous President's Budget is due to SBIR/STTR (-$0.723 million) and Cancelled Accounts (-$0.002 million) reductions.

FY 2025 a reduction of $20.629 million consists of $0.737 million applied to meet DoD overall funding reductions, which were spread to mitigate impact.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	Project (Number/Name) 790 / *Rapid Defense Experimentation Reserve (RDER)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
790: *Rapid Defense Experimentation Reserve (RDER)*	0.000	24.033	79.773	53.149	-	53.149	76.976	79.964	81.707	83.340	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The RDER program focuses on a campaign of joint experimentation on rapid capabilities that address our most complex military challenges. The Secretary of Defense established RDER in the Defense Planning Guidance to enable multi-component joint experimentation through a campaign of learning and to establish a body of evidence to support rapid adoption by the Services. RDER enables the Services, agencies, industry, and other organizations to identify “best of breed” capabilities to be prototyped in large-scale joint experiments and validate and/or refine the Joint Warfighting Concept (JWC).

OUSD(R&E)’s process for incubating promising prototypes starts with a novel experimental design based on a web of interconnected systems addressing specific Defense Planning Scenarios. This approach is unique from other experimentation that focuses on determining individual system efficacy. Additionally, the experimental design is unique in using the web of systems to explore new warfighting concepts that capitalize on contributions of multiple Services as a true joint force. The experimentation yields live data that the OUSD(R&E) analyzes against the performance predicted in modelling and simulation.

OUSD(R&E) manages the Department’s multiple RDER experimentation events and conducts integration activities with the Joint Force. OUSD(R&E) recommends new projects, reviews project progress, and incorporates the most promising innovative prototypes into existing exercise venues such as: Project Capstone, Northern Edge, Valiant Shield, Talisman Sabre, Grey Flag, Joint Battle Problem, and TREX. RDER utilizes funding to plan, integrate, and oversee joint experiments; provide assessments on project viability; and, deliver the results to the Deputy Secretary of Defense management action group to facilitate decisions on transitioning promising capabilities with the Services.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Rapid Defense Experimentation Reserve (RDER) Program Management	2.533	9.273	8.480
Description: Program Management includes the oversight of the execution of prototypes resourced with the Services to address required capabilities. This effort includes the evaluation of service candidates through the technical maturation phase prior to executing an experiment. Activities include monitoring new technologies through the innovation stakeholder community, which includes the Service laboratories, industry, academia, and federally funded research and development centers and assess “best of breed” prototypes integrated in joint experimentation venues.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	**Project (Number/Name)** 790 / *Rapid Defense Experimentation Reserve (RDER)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
RDER will complete the evaluation of FY 2023 candidates as well as initiate the execution of FY 2024 experimentation. This includes plans to establish and coordinate experimentation venues that provide interoperability for multi-component defense planning scenarios and mitigate potential risks of incompatibility at the joint level. Program Managers (PMs) oversees the cost, schedule, and performance of prototypes within the Joint Warfighting Concepts (JWC) functional battles: Fires; Command and Control (C2); Information Advantage (IA); Contested Logistics and Space and Cyber. RDER PMs plan to collaborate with system developers to select risk reduction experiments that meet the technology maturation milestones for the multi-component experiments at Project Capstone 2024, Valiant Shield 2024, Talisman Sabre, Grey Flag 2024, Joint Battle Problem 2024, and TREX 2024. RDER PMs provide program oversight and prepare assessment and experimentation plans for each prototype technology. ***FY 2025 Plans:*** RDER will complete the evaluation of FY 2024 candidates and initiate the execution of FY 2025 experimentation. This establishes and coordinates experimentation venues that provide interoperability for multi-component defense planning scenarios and mitigate potential risks of incompatibility at the joint level. PMs plan to oversee the cost, schedule, and performance of prototypes within the JWC functional battles: Fires; C2; IA; Contested Logistics and Space and Cyber. RDER PMs plan to collaborate with system developers to select risk reduction experiments that meet the technology maturation milestones for the multi-component experiments at Project Capstone 2025, Northern Edge 2025, Talisman Sabre 2025, Grey Flag 2025, Joint Battle Problem 2025, and TREX 2025. RDER PMs provide program oversight and prepare assessment and experimentation plans for each prototype technology. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2024, the Department directed an increase to support coalition experimentation within the U.S. Indo-Pacific Command (INDOPACOM) area of responsibility. This level of effort was reduced in FY 2025, which resulted in a decrease in coalition experimentation.			
Title: Experiments Integration	4.600	11.500	7.281
Description: RDER coordinates with the exercise planning cells at the Combatant Commands (CCMD) to conduct experiments. Technical readiness reviews evaluate system design requirements in order to define requirements for participation into multiple experimentation venues. RDER reviews prototype system requirements and maps each within the network architectures for data dissemination and collection. RDER identifies risks that would impede interoperability at multi-component experiment venues. This supports analysis with Federally Funded Research Development Center (FFRDC)/ University Affiliated Research Centers (UARC) to evaluate the utility of Sensor or Kill webs for the CCMD experimentation team. ***FY 2024 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	**Project (Number/Name)** 790 / *Rapid Defense Experimentation Reserve (RDER)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Funding integrates prototypes into multiple experimentation events to include Project Capstone 2024, Valiant Shield 2024, Talisman Sabre, Grey Flag 2024, Joint Battle Problem 2024, and TREX 2024. The effort supports operational readiness review for each technology which includes safety review, Authority to Operate, and compliance standards to support technical maturity. This effort is executed for each experimentation event within the campaign series. ***FY 2025 Plans:*** Funding integrates prototypes into multiple experimentation events to include Project Capstone 2025, Northern Edge 2025, Talisman Sabre 2025, Grey Flag 2025, Joint Battle Problem 2025, and TREX 2025. The effort supports operational readiness reviews for each technology which includes safety review, Authority to Operate (ATO), and compliance standards to support technical maturity. This effort is executed for each experimentation event within the campaign series. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2024, the Department directed an increase to support coalition experimentation within the U.S. Indo-Pacific Command (INDOPACOM) area of responsibility. This level of effort was reduced in FY 2025, which resulted in a decrease in coalition experimentation.			
Title: Experiment Design	2.500	11.500	7.281
Description: Resources provide the analysis to support the Combatant Commands establishing the system-of-system level architecture for integrating multiple prototypes into a single experimentation event. For each experimentation event, RDER evaluates each system level design to establish a government reference architecture that seamlessly employs prototype technologies at multiple experimentations geolocated across multiple states. Measures of effectiveness and measures of performance are established to be collected at each event. These Integrated assessment plans are developed for each individual technology. ***FY 2024 Plans:*** In FY 2024, RDER plans to employ government reference architecture for each experimentation venue to measure prototype interoperability at Project Capstone 2024, Valiant Shield 2024, Talisman Sabre, Grey Flag 2024, Joint Battle Problem 2024, and TREX 2024. RDER evaluates and validates the technical maturity of each interface with the experimentation architectural design utilizing architectural analysis tools. The final experimentation architecture is utilized to evaluate performance of the warfighter kill chains. ***FY 2025 Plans:*** In FY 2025, RDER plans to employ government reference architecture for each experimentation venue to measure prototype interoperability at Project Capstone 2025, Northern Edge 2025, Talisman Sabre 2025, Grey Flag 2025, Joint Battle Problem 2025, and TREX 2025. RDER evaluates and validates the technical maturity of each interface with the experimentation architectural			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	**Project (Number/Name)** 790 / *Rapid Defense Experimentation Reserve (RDER)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
design utilizing architectural analysis tools. The final experimentation architecture is utilized to evaluate performance of the warfighter kill chains. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2024, the Department directed an increase to support coalition experimentation within the U.S. Indo-Pacific Command (INDOPACOM) area of responsibility. This level of effort was reduced in FY 2025, which resulted in a decrease in coalition experimentation.			
Title: Experimentation Execution ***Description:*** The execution phase consists of the collection of experimental system performance that is evaluated against the measures of effectiveness and measures of performance that have been previously established. RDER establishes a data collection command and control network architecture to monitor the behavioral analysis of prototypes during an experimental event. Data is collected and stored for post event analysis. RDER deploys an experimentation unit to provide onsite observation, oversight, and governance during a prototype experiment event. These evaluation teams are required at each data collection node or technology location involved in the experiment. ***FY 2024 Plans:*** In FY 2024, RDER shall deploy a Data Experimentation White Cell (DEWC) for experimental prototype data collection during Project Capstone 2024, Valiant Shield 2024, Talisman Sabre 2024, Grey Flag 2024, Joint Battle Problem 2024, and TREX 2024. RDER shall procure an additional command and control facility to support the experimentation that are geographically dispersed. This function requires personnel to maintain operational command and control of each prototype to perform experimentation. Personnel are located onsite with the prototype and the deployed operational cell to assess the operational readiness of the capability. The functional cell acquires the operational accreditation of the DEWC for each experiment and acquires the automated tools to produce daily quick look analysis for each event. Operation updates and reports are briefed daily to OSD, Services, and Combatant Command. ***FY 2025 Plans:*** In FY 2025, RDER shall deploy the DEWC for experimental prototype data collection during Project Capstone 2025, Northern Edge 2025, Talisman Sabre 2025, Grey Flag 2025, Joint Battle Problem 2025, and TREX 2025. RDER shall procure an additional command and control facility to support the experimentation that are geographically dispersed. This function requires personnel to maintain operational command and control of each prototype to perform experimentation. Personnel are located onsite with the prototype and the deployed operational cell to assess the operational readiness of the capability. The functional cell acquires the operational accreditation of the DEWC for each experiment and acquires the automated tools to produce daily quick look analysis for each event. Operation updates and reports are briefed daily to OSD, Services, and Combatant Command. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	5.000	12.500	7.911

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	**Project (Number/Name)** 790 / *Rapid Defense Experimentation Reserve (RDER)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2024, the Department directed an increase to support coalition experimentation within the U.S. Indo-Pacific Command (INDOPACOM) area of responsibility. This level of effort was reduced in FY 2025, which resulted in a decrease in coalition experimentation.			
Title: Opposing Force (OPFOR) Threat Emulation	5.900	20.500	13.007
Description: Opposing Force (OPFOR) threat emulation establishes a plausible, flexible military force representing a composite of varying capabilities of actual adversary forces within an experiment. Resources provide a threat informed and operationally relevant environment to conduct experiments. RDER employs OPFOR across geographically dispersed experiments which requires the procurement of Manpower to operate OPFOR capabilities, a deployable experimentation white cell to maintain command and control of RDER proposal external from the exercise, maritime threats, UAVs/Drones, UUVs, Small boats, Electromagnetic Spectrum emitters, mobile and fixed medium range BMs, and Decoys to establish a relevant environment for RDER capabilities. ***FY 2024 Plans:*** In FY 2024, OPFOR emulations expected to continue with threat emitters, maritime and ground-based targets, decoys, and communications nodes necessary to create a fully threat informed, multi-domain, operationally relevant environment for projects across Project Capstone 2024, Valiant Shield 2024, Talisman Sabre, Grey Flag 2024, Joint Battle Problem 2024, and TREX 2024. This functional component conducts a threat analysis to identify and acquire threat representative targets to establish a relevant environment for the experiment. The entity provides personnel to act as OPFOR that would serve as the viable force during the experiment. The entity coordinates on all the communication equipment and infrastructure that is required to integrate into the Services tactical networks. This effort also coordinates all logistical shipping and storage requirements for threat representative targets to forward deployed events. ***FY 2025 Plans:*** In FY 2025, OPFOR emulations shall be reduced across the experiments via the allocations of threat emitters, maritime and ground-based targets, decoys, and communications nodes necessary to create a fully threat informed, multi-domain, operationally relevant environment for projects across Project Capstone 2025, Northern Edge 2025, Talisman Sabre 2025, Grey Flag 2025, Joint Battle Problem 2025, and TREX 2025. This functional component conducts a threat analysis to identify and acquire threat representative targets to establish a relevant environment for the experiment. The entity provides personnel to act as OPFOR that would serve as the viable force during the experiment. The entity coordinates on all the communication equipment and infrastructure that is required to integrate into the Services tactical networks. This effort also coordinates all logistical shipping and storage requirements for threat representative targets to forward deployed events. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	**Project (Number/Name)** 790 / *Rapid Defense Experimentation Reserve (RDER)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
In FY 2024, the Department directed an increase to support coalition experimentation within the U.S. Indo-Pacific Command (INDOPACOM) area of responsibility. This level of effort was reduced in FY 2025, which resulted in a decrease in coalition experimentation.			
Title: Data Collection and Assessment ***Description:*** This effort supports the manpower required for data collection teams. The collection teams record the joint operational data to assess the measurements of performance and measurements of effectiveness of a prototype in a multi-component experimentation venue. It resources personnel who are co-located at multiple experimentation locations to include experiment venues, UARC/FFRDC's in the Continental United States, as well as at the CCMD headquarters. Data collection teams are required for each individual technology being evaluated at each event. ***FY 2024 Plans:*** RDER plans perform data collection on projects executing experiments at Project Capstone 2024, Valiant Shield 2024, Talisman Sabre, Grey Flag 2024, Joint Battle Problem 2024, and TREX 2024. The team provides an independent assessment of each report daily during an experimentation. This includes acquiring the analysis tools for each prototype to support the analytical analysis of the data. An analysis team will provide a report that would provide recommendations on experimentation findings. ***FY 2025 Plans:*** RDER plans a slight reduction on the coalition experimentation but continues to perform data collection on projects executing experiments at Project Capstone 2025, Northern Edge 2025, Talisman Sabre 2025, Grey Flag 2025, Joint Battle Problem 2025, and TREX 2025. The team provides an independent assessment of each report daily during an experimentation. This includes acquiring the analysis tools for each prototype to support the analytical analysis of the data. An analysis team will provide a report that would provide recommendations on experimentation findings. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2024, the Department directed an increase to support coalition experimentation within the U.S. Indo-Pacific Command (INDOPACOM) area of responsibility. This level of effort was reduced in FY 2025, which resulted in a decrease in coalition experimentation.	3.500	14.500	9.189
Accomplishments/Planned Programs Subtotals	24.033	79.773	53.149

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	**Project (Number/Name)** 790 / *Rapid Defense Experimentation Reserve (RDER)*

D. Acquisition Strategy

RDER leverages the Services' and Defense Agencies' most efficient and effective acquisition approach for experimentation and Program Management of oversight of technologies. This includes using Other Transaction Authorities and new or existing contract vehicles.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	Project (Number/Name) 790 / *Rapid Defense Experimentation Reserve (RDER)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Experiments Integration	MIPR	Johns Hopkins University Applied Physics Laboratory : Laurel, MD	-	2.000	Mar 2023	4.000	Nov 2023	2.375	Dec 2024	-		2.375	Continuing	Continuing	-
Experiments Integration	MIPR	Naval Surface Warfare Center Dahlgren Division (NSWCDD), : Dahlgren, VA	-	0.700	Mar 2023	5.000	Nov 2023	3.375	Dec 2024	-		3.375	Continuing	Continuing	-
Experiments Integration	MIPR	MULTI : MULTI	-	1.900	Jun 2023	2.500	Mar 2024	1.531	Jun 2025	-		1.531	Continuing	Continuing	-
Experiment Design	MIPR	Naval Surface Warfare Center Dahlgren Division (NSWCDD), : Dahlgren, VA	-	1.200	Mar 2023	7.500	Nov 2023	3.375	Dec 2024	-		3.375	Continuing	Continuing	-
Experiment Design	MIPR	MULTI : MULTI	-	1.300	Jun 2023	4.000	Mar 2024	3.906	Dec 2024	-		3.906	Continuing	Continuing	-
Experimentation Execution	MIPR	Johns Hopkins University Applied Physics Laboratory : : Laurel, MD	-	4.500	Mar 2023	5.000	Nov 2023	3.239	Dec 2024	-		3.239	Continuing	Continuing	-
Experimentation Execution	MIPR	MULTI : MULTI	-	0.500	Jun 2023	7.500	Mar 2024	4.672	Jun 2025	-		4.672	Continuing	Continuing	-
Opposing Force (OPFOR)	MIPR	Naval Surface Warfare Center Port Hueneme (NSWCPH), : Port Hueneme, CA	-	3.000	Mar 2025	6.000	Nov 2023	4.080	Dec 2024	-		4.080	Continuing	Continuing	-
OPFOR	MIPR	GSA FAS AAS FEDSIM (QF0B), : Washington, D.C.	-	0.950	Mar 2023	8.000	Nov 2023	6.080	Dec 2024	-		6.080	Continuing	Continuing	-
OPFOR	MIPR	MULTI : MULTI	-	1.950	Jun 2023	6.500	Mar 2024	2.847	Jun 2025	-		2.847	Continuing	Continuing	-
Data Collection and Assessment	MIPR	Naval Surface Warfare Center Dahlgren Division	-	0.900	Mar 2023	6.500	Nov 2023	4.133	Dec 2024	-		4.133	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	Project (Number/Name) 790 / *Rapid Defense Experimentation Reserve (RDER)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		(NSWCDD), : Dahlgren, VA													
Data Collection and Assessment	MIPR	Naval Surface Warfare Center Indian Head Detachment (NSWC IHD), : Indian Head, MD	-	1.505	Mar 2023	4.000	Nov 2023	2.633	Dec 2024	-		2.633	Continuing	Continuing	-
Data Collection and Assessment	MIPR	NSWC CRANE : INDIANA	-	0.400	Mar 2023	2.000	Nov 2023	1.633	Dec 2024	-		1.633	Continuing	Continuing	-
Data Collection and Assessment	MIPR	US ARSC : Aberdeen, MD	-	0.695	Mar 2023	2.000	Nov 2023	0.790	Dec 2024	-		0.790	Continuing	Continuing	-
RDER Program Management	MIPR	MULTI : MULTI	-	2.533	Jun 2023	9.273	Mar 2024	8.480	Mar 2024	-		8.480	Continuing	Continuing	-
		Subtotal	-	24.033		79.773		53.149		-		53.149	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	24.033		79.773		53.149		-		53.149	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	**Project (Number/Name)** 790 / *Rapid Defense Experimentation Reserve (RDER)*

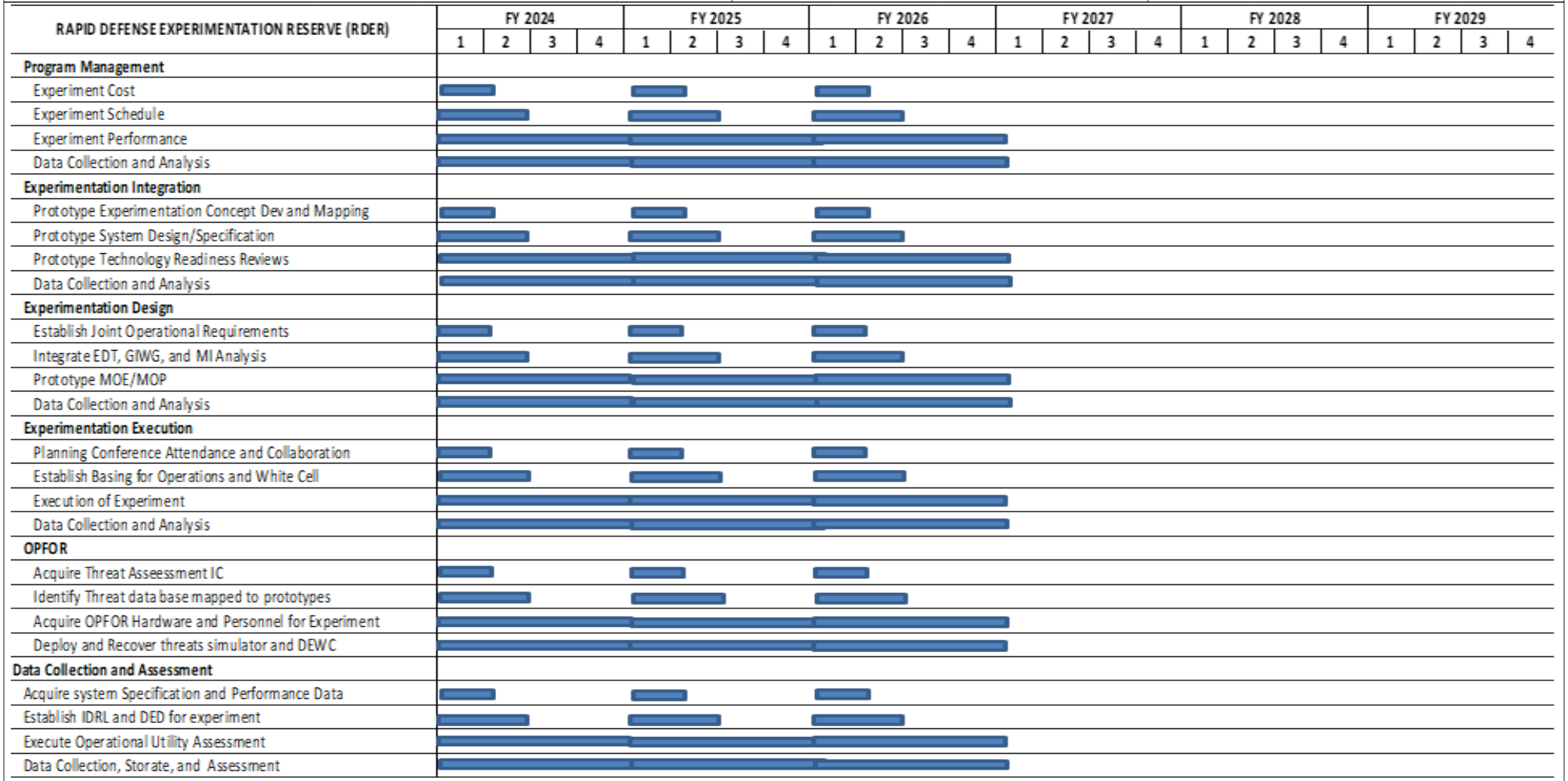

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604790D8Z / *Rapid Defense Experimentation Reserve (RDER)*	**Project (Number/Name)** 790 / *Rapid Defense Experimentation Reserve (RDER)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Rapid Defense Experimentation Reserve Program Management				
Program Management	1	2025	4	2026
Rapid Defense Experimentation Reserve Experiments Integration				
Experiments Integration	1	2025	4	2026
Rapid Defense Experimentation Reserve Experiment Design				
Experiment Design	1	2025	4	2026
Rapid Defense Experimentation Reserve Experimentation Execution				
Experimentation Execution	1	2025	4	2026
Rapid Defense Experimentation Reserve Opposing Force (OPFOR) Threat Emulation				
Opposing Force (OPFOR) Threat Emulation	1	2025	4	2026
Rapid Defense Experimentation Reserve Data Collection and Assessment				
Data Collection and Assessment	1	2025	4	2026

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604791D8Z / *Multi-Domain Joint Operations (MDJO)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	11.383	0.000	11.383	11.610	11.842	12.077	12.319	Continuing	Continuing
122: *Multi-Domain Joint Operations*	0.000	0.000	0.000	11.383	0.000	11.383	11.610	11.842	12.077	12.319	Continuing	Continuing

Note

New Start (Y/N): No

In FY 2025, funding is realigned from the Defense Innovation Acceleration Program Element 0603838D8Z, Project Code 731, Innovation and Modernization and the Trusted & Assured Microelectronics Program Element 0605294D8Z, to identify and transition emerging technologies, systems, and systems-of-systems that close time-critical joint gaps in high-priority, multi-domain missions, which is a priority of the National Defense Strategy. FY 2025 funding is a continuation of FY 2024 efforts to identify critical DoD missions requiring accelerated technical solutions and rapid engagement with the defense ecosystem to transition proven prototyped capabilities to Service or Defense Agency programs of record.

A. Mission Description and Budget Item Justification

Multi-Domain Joint Operations (MDJO) facilitates transition of priority joint capabilities to the Military Services and Agencies. MDJO completes this through persistent, proactive stakeholder engagement with continuous transition risk assessment, development of technology transition plans, and coordination across the Department of Defense. Ensuring transition begins in the project identification phase, with MDJO guiding project selection for the Defense Innovation Acceleration program, the Rapid Prototyping Program, the Rapid Defense Experimentation Reserve (RDER), and others. MDJO drives project selection toward National Defense Strategy priorities by leveraging warfighter input captured through its role as the official representative to the Functional Capability Boards (FCB) and Joint Requirements Oversight Council (JROC) for the Office of the Secretary of Defense for Research and Engineering. Additionally, MDJO provides technical expertise to the JROC within the supporting areas of Joint Fires, Joint Contested Logistics, Joint Command and Control, and Joint Information Advantage. This program provides funding necessary for MDJO to fulfill its project identification and transition support roles.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604791D8Z / *Multi-Domain Joint Operations (MDJO)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	11.383	-	11.383
Total Adjustments	0.000	0.000	11.383	-	11.383
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustment	-	-	11.383	-	11.383

Change Summary Explanation

FY 2025 funding realignment

+$11.475 million

+$6.927 million from the Defense Innovation Acceleration (DIA) Program Element 0603838D8Z, Project Code 731, Innovation and Modernization

$4.548 million from the Trusted & Assured Microelectronics Program Element 0605294D8Z, to identify and transition emerging technologies, systems, and systems-of-systems that close time-critical joint gaps in high-priority, multi-domain missions, which is a priority of the National Defense Strategy. A reduction of $0.115 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. A funding increase of $0.023 million for Economic Assumptions

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604791D8Z / *Multi-Domain Joint Operations (MDJO)*	Project (Number/Name) 122 / *Multi-Domain Joint Operations*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
122: *Multi-Domain Joint Operations*	0.000	0.000	0.000	11.383	0.000	11.383	11.610	11.842	12.077	12.319	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Multi-Domain Joint Operations (MDJO) facilitates the prioritization of critical DoD missions requiring accelerated technical solutions, and rapidly ideates potential innovative approaches, technologies and capabilities to address them. Project identification activities inform the specific focus areas for the Assistant Secretary of Defense for Mission Capabilities ASD(MC) portfolio consisting of Mission Integration and Prototyping & Experimentation. Concurrently, project transition activities accelerate the fielding of successfully demonstrated joint capabilities. MDJO focuses on building enduring advantages at the core of its mission and was established to align Joint Force efforts to the National Defense Strategy priority. This project supports the Assistant Secretary of Defense for Mission Capabilities ASD(MC) portfolio.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Project Identification Activities	-	-	4.660
Description: Multi-Domain Joint Operations (MDJO) identifies technologies, systems, and system-of-systems that close time-critical joint gaps in high-priority, multi-domain missions. MDJO leverages capability gap assessments, Science & Technology (S&T) innovation harvesting, the Defense Advanced Research Projects Agency (DARPA) Technology Development Working Group, and continuous engagement across the Department of Defense to conduct project identification. As part of this effort, MDJO conducts a systematic and inclusive selection process for the Rapid Defense Experimentation Reserve (RDER) program. ***FY 2025 Plans:*** Conduct identification of critical DoD missions requiring accelerated technical solutions to shape prototyping efforts across the Assistant Secretary of Defense for Mission Capabilities ASD(MC) portfolio. The identification process is achieved through capability gap assessments and continuous engagement with the Joint Staff, Combatant Commands, and Services; Science & Technology harvesting through communities of interest, data collection, and innovation workshops; Technology Development Working Group integration; systematic, inclusive facilitation of the RDER selection process; and, participation in the Functional Capability Boards for the Joint Requirements Oversight Council (JROC). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 funding realignment from the Defense Innovation Acceleration (DIA) Program Element 0603838D8Z, Project Code 731, Innovation and Modernization, to fund project identification activities.			
Title: Project Transition Activities	-	-	6.723

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604791D8Z / *Multi-Domain Joint Operations (MDJO)*	**Project (Number/Name)** 122 / *Multi-Domain Joint Operations*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Multi-Domain Joint Operations (MDJO) transitions technologies, systems, and system-of-systems that close time-critical joint gaps in high-priority, multi-domain missions. To accomplish this mission, MDJO maintains proactive stakeholder engagement with continuous transition risk assessment for active prototyping and demonstration efforts. Upon successful completion of development, MDJO works with the Office of the Under Secretary of Defense for Acquisition and Sustainment Competitive Advantage Pathfinders (CAP) program to ensure successful transition into a fielded capability. MDJO also leverages the Agile Transition Procurement Pilot established in section 834 of the FY 2022 National Defense Authorization Act (NDAA) to facilitate transition where appropriate. ***FY 2025 Plans:*** Conduct prior transition activities in collaboration with the Office of the Under Secretary of Defense for Acquisition and Sustainment OUSD(A&S) Competitive Advantage Pathfinders. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 funding realignment from the Defense Innovation Acceleration (DIA) Program Element 0603838D8Z, Project Code 731, Innovation and Modernization, to conduct project transition activities.			
Accomplishments/Planned Programs Subtotals	-	-	11.383

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Multi-Domain Joint Operations leverages the most efficient and effective acquisition approach for experimentation and program management of identification and transition activities. This includes using Other Transaction Authority (OTA) and new or existing contract vehicles.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604791D8Z / *Multi-Domain Joint Operations (MDJO)*	Project (Number/Name) 122 / *Multi-Domain Joint Operations*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UARC Support	Option/ FFPLOE	Johns Hopkins University Applied Physics Laboratory : Laurel, MD	0.000	0.000		0.000		1.623	Oct 2023	-		1.623	Continuing	Continuing	-
Various	MIPR	Various : Various	0.000	0.000		0.000		9.760	Oct 2023	0.000		9.760	Continuing	Continuing	-
		Subtotal	0.000	0.000		0.000		11.383		0.000		11.383	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		11.383		0.000		11.383	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604791D8Z / *Multi-Domain Joint Operations (MDJO)*	**Project (Number/Name)** 122 / *Multi-Domain Joint Operations*

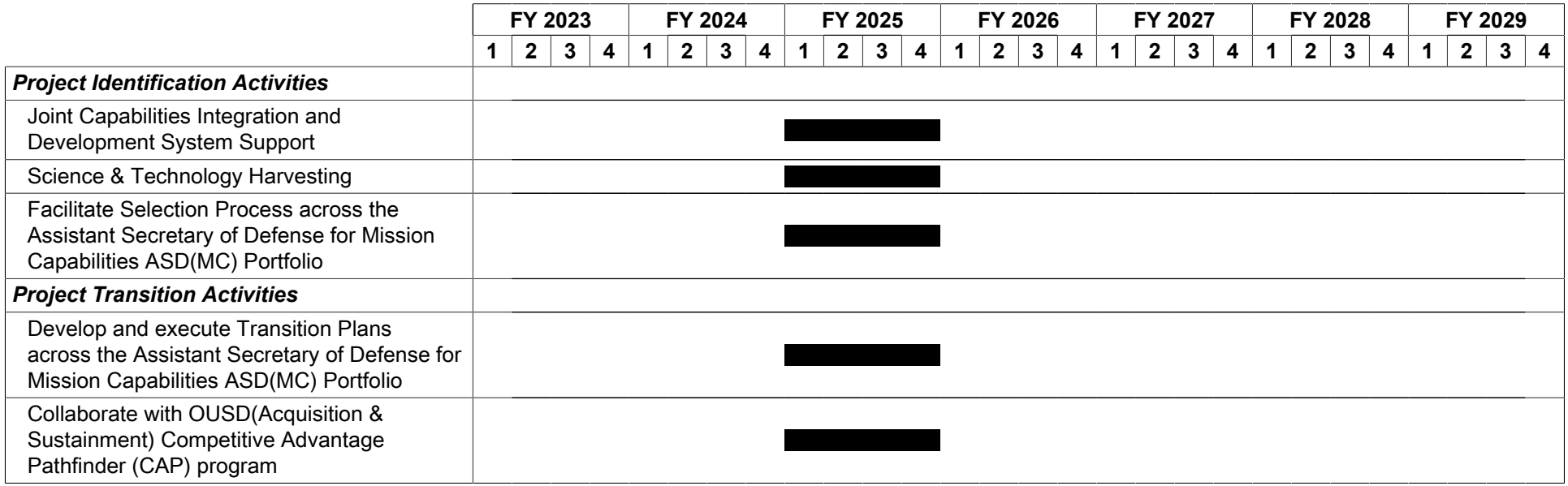

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604791D8Z / *Multi-Domain Joint Operations (MDJO)*	**Project (Number/Name)** 122 / *Multi-Domain Joint Operations*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Project Identification Activities				
Joint Capabilities Integration and Development System Support	1	2025	4	2025
Science & Technology Harvesting	1	2025	4	2025
Facilitate Selection Process across the Assistant Secretary of Defense for Mission Capabilities ASD(MC) Portfolio	1	2025	4	2025
Project Transition Activities				
Develop and execute Transition Plans across the Assistant Secretary of Defense for Mission Capabilities ASD(MC) Portfolio	1	2025	4	2025
Collaborate with OUSD(Acquisition & Sustainment) Competitive Advantage Pathfinder (CAP) program	1	2025	4	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604924D8Z / *High Energy Laser Advanced Component Development & Prototype*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	2.931	-	2.931	5.646	8.207	11.023	13.683	Continuing	Continuing
921: *High Energy Laser Tech Maturation*	0.000	0.000	0.000	2.931	-	2.931	5.646	8.207	11.023	13.683	Continuing	Continuing

Note

New Start (Y/N): YES

Funding was realigned from Program Element 0602890D8Z: High Energy Laser Development and Program Element 0603924D8Z: High Energy Laser Advanced Development.

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to build a sustainable and long-term advantage, as well as a resilient joint force and defense ecosystem.

This program reduces the technology risk, engineering integration, and life-cycle costs associated with directed energy weapon systems. Conducting competitive prototyping of system elements to inform requirements, this program will develop functional and allocated baselines of end-item system configurations. Directed energy weapon systems have many potential advantages, including speed-of-light time-to-target, high precision, low incremental cost per kill, and a magazine that is recharged through on-board, fuel-based power and thermal management systems that reduce logistics requirements in contrast to stocks of munitions or warheads. As a result, directed energy weapon systems have the potential to perform a wide variety of military missions. Activities conducted under this program will evaluate, prototype, and demonstrate directed-energy integrated technologies in operationally relevant environments, enabling the employment of directed energy weapon systems in support of mission areas across the Department of Defense.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	2.931	-	2.931
Total Adjustments	0.000	0.000	2.931	-	2.931
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Internal Realignments	-	-	2.961	-	2.961

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604924D8Z *I High Energy Laser Advanced Component Development & Prototype*

• Program Adjustment	-	-	-0.030	-	-0.030

Change Summary Explanation

The increase in FY 2025 of $2.925 million is the result of a internal realignments from (1) 0602890D8Z: High Energy Laser Development (0.727 million) and (2) 0603924D8Z: High Energy Laser Advanced Development (2.228 million).

In addition to the internal realignments, a reduction of $-0.030 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact.

This overall increase is in support of the evaluation, development, and demonstration of directed energy advanced components and prototypes.

Small increase of due to economic assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604924D8Z / *High Energy Laser Advanced Component Development & Prototype*	Project (Number/Name) 921 / *High Energy Laser Tech Maturation*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
921: *High Energy Laser Tech Maturation*	0.000	0.000	0.000	2.931	-	2.931	5.646	8.207	11.023	13.683	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): YES

Funding was realigned from Program Element 0602890D8Z: High Energy Laser Development and Program Element 0603924D8Z: High Energy Laser Advanced Development.

A. Mission Description and Budget Item Justification

This program element reduces the technology risk, engineering integration, and life-cycle costs associated with directed energy weapon systems. Conducting competitive prototyping of system elements to inform requirements, this program will develop functional and allocated baselines of end-item system configurations. Directed energy weapon systems have many potential advantages, including speed-of-light time-to-target, high precision, low incremental cost per kill, and a magazine that is recharged through on-board, fuel-based power and thermal management systems that reduce logistics requirements in contrast to stocks of munitions or warheads. As a result, directed energy weapon systems have the potential to perform a wide variety of military missions. Activities conducted under this program will evaluate, prototype, and demonstrate directed-energy integrated technologies in operationally relevant environments, enabling the employment of directed energy weapon systems in support of mission areas across the Department of Defense.

This program provides cross-cutting products to the Services, enabling next generation directed energy weapons that engage threats at longer ranges with shorter engagement timelines in adverse environments with improved size, weight, and power requirements. Products include: common architectures; mission engineering studies; and next generation battle management. As a result, this program transitions directed-energy technology to the Services at a high enough technical readiness level for insertion into directed energy weapon systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Directed Energy Advanced Component Development & Prototypes	-	-	2.931
Description: Develop, mature, and demonstrate open architectures that will enable operational weapon systems. Develop, mature, and demonstrate command and control to improve battle management for directed energy systems. Conduct mission engineering studies with system-level models to evaluate military utility.			
FY 2025 Plans: Open Architecture: Using a modular open system approach, leverage previously identified reference architectures and identify a scalable beam control solution.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604924D8Z / *High Energy Laser Advanced Component Development & Prototype*	**Project (Number/Name)** 921 / *High Energy Laser Tech Maturation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Command and Control: Survey engagement timelines for missions across the Department of Defense and optimize the kill chain associated with directed energy weapon systems to reduce latency and enable more robust battle management. Mission Engineering: Develop high fidelity system-level models and conduct military utility studies with warfighter input to evaluate the future employment of directed energy weapon systems in operationally relevant environments. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $2.925 million between FY 2024 and FY 2025 reflects internal realignments from Program Element 0602890D8Z, High Energy Laser Development and Program Element 0603924D8Z: High Energy Laser Advanced Development. Overall, this increase will support the evaluation, development, and demonstration of directed energy advanced components and prototypes.			
Accomplishments/Planned Programs Subtotals	-	-	2.931

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

NA

D. Acquisition Strategy

NA

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604924D8Z / *High Energy Laser Advanced Component Development & Prototype*	Project (Number/Name) 921 / *High Energy Laser Tech Maturation*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Open Architecture	WR	NSWC Dahlgren : Dahlgren, VA	-	-		-		0.400		0.000		0.400	Continuing	Continuing	-
Open Architecture	C/CPFF	MITRE : McLean, VA	-	-		-		0.525		0.000		0.525	Continuing	Continuing	-
Command & Control	WR	NSWC Dahlgren : Dahlgren, VA	-	-		-		1.031		0.000		1.031	Continuing	Continuing	-
Mission Engineering	WR	AFRL Directed Energy : Albuquerque, NM	-	-		-		0.975		0.000		0.975	Continuing	Continuing	-
		Subtotal	-	-		-		2.931		0.000		2.931	Continuing	Continuing	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		2.931		0.000		2.931	Continuing	Continuing	N/A

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604924D8Z / *High Energy Laser Advanced Component Development & Prototype*	**Project (Number/Name)** 921 / *High Energy Laser Tech Maturation*

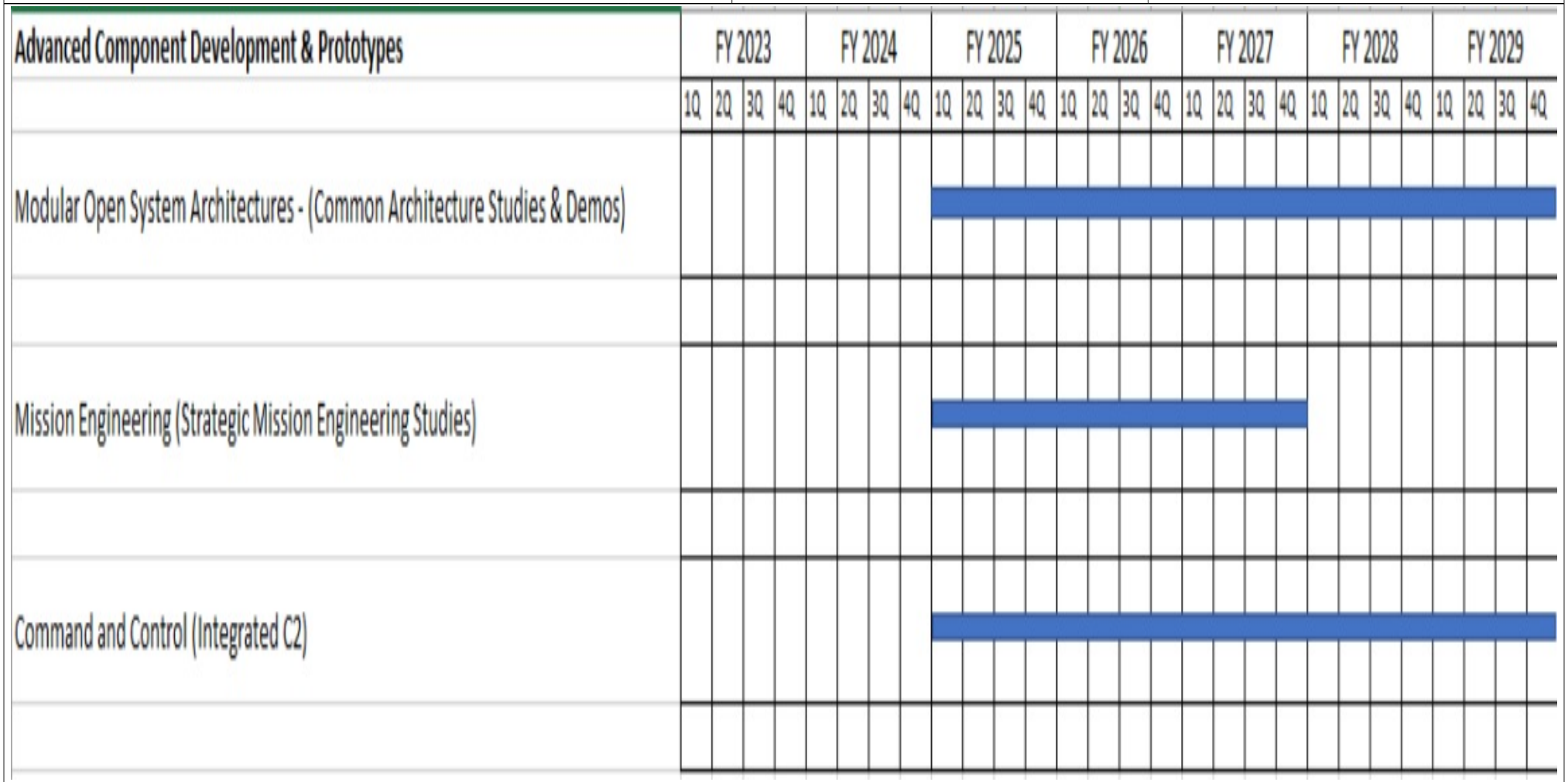

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0305245D8Z / *Intelligence Capabilities and Innovation Investments*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	51.002	13.000	3.000	51.784	-	51.784	49.885	23.124	24.576	25.311	Continuing	Continuing
592: *Intelligence Capabilities and Innovation Investments*	51.002	13.000	3.000	51.784	-	51.784	49.885	23.124	24.576	25.311	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

Classified program.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	3.000	0.000	-	0.000
Current President's Budget	13.000	3.000	51.784	0.000	51.784
Total Adjustments	13.000	0.000	51.784	-	51.784
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	13.000	-			
• SBIR/STTR Transfer	-	-			
• Departmental Adjustment	-	-	51.784	-	51.784

Change Summary Explanation

Classified

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0305245D8Z / *Intelligence Capabilities and Innovation Investments*	Project (Number/Name) 592 / *Intelligence Capabilities and Innovation Investments*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
592: *Intelligence Capabilities and Innovation Investments*	51.002	13.000	3.000	51.784	-	51.784	49.885	23.124	24.576	25.311	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Classified.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Classified	13.000	3.000	51.784
Description: Classified. ***FY 2024 Plans:*** Classified. ***FY 2025 Plans:*** Classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Classified			
Accomplishments/Planned Programs Subtotals	13.000	3.000	51.784

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• 0305245D8Z: *Intelligence Capabilities and Innovation Investments O&M*	7.030	8.425	10.898	0.000	10.898	11.518	12.068	12.683	12.955	Continuing	Continuing

Remarks

D. Acquisition Strategy

The contracting strategy follows guidance outlined in the DoD 5000 series directives, Federal Acquisition Regulations (FAR) and Defense Federal Acquisition Regulars (DFAR).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0305245D8Z / *Intelligence Capabilities and Innovation Investments*	**Project (Number/Name)** 592 / *Intelligence Capabilities and Innovation Investments*

Remarks

Classified.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0305245D8Z / *Intelligence Capabilities and Innovation Investments*	**Project (Number/Name)** 592 / *Intelligence Capabilities and Innovation Investments*

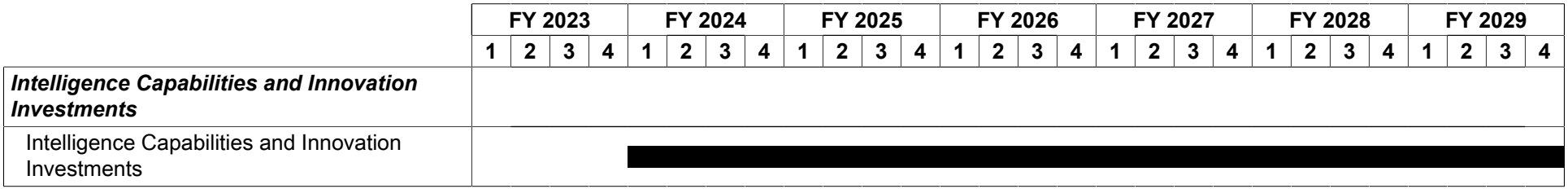

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0305245D8Z / *Intelligence Capabilities and Innovation Investments*	**Project (Number/Name)** 592 / *Intelligence Capabilities and Innovation Investments*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Intelligence Capabilities and Innovation Investments				
Intelligence Capabilities and Innovation Investments	1	2024	4	2029

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0901579D8Z / *Office of Strategic Capital (OSC)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	99.000	132.640	-	132.640	128.258	0.000	0.000	0.000	Continuing	Continuing
732: *Office of Strategic Capital*	0.000	0.000	99.000	132.640	-	132.640	128.258	0.000	0.000	0.000	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build Sustainable and Long-Term Advantage and Build a Resilient Joint Force.

The Office of Strategic Capital (OSC) program will use available financial tools, including grants, contracts, direct loans, loan guarantees, to increase private sector investments in critical technologies needed to solve U.S. national and economic security challenges. Specifically, the OSC program will invest in supply-chain critical technologies to address both access to capital and cost of capital market failures. As a result, OSC investments will increase the pace of commercialization, manufacturing, and infrastructure investments in the critical technology supply base.

In addition, OSC will provide an alternative source of capital to our global competitors who seek to influence and leverage private capital to advance their technology objectives counter to U.S. interests. Current peer competitor action requires urgent United States Government response to attract and scale investment in support of national and economic security.

Specifically, the program will:
• Increase deep technology private capital investment to enhance the commercialization of DoD and United States Government (USG) Science & Technology investments;
• Increase commercialization, manufacturing, and infrastructure to scale domestic production and secure the national security supply chain for industries of the future;
• Finance industrial transformation to mobilize suppliers to support emerging needs and industries of the future;
• Co-invest with partners and allies in international critical technology companies, where practical, to support international interoperability as well as domestic integration and scaled production; and
• Accelerate the transition and fielding of capabilities that meet service priorities.

The programs will be executed through DoD services and interagency partners.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0901579D8Z / *Office of Strategic Capital (OSC)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	99.000	145.564	-	145.564
Current President's Budget	0.000	99.000	132.640	-	132.640
Total Adjustments	0.000	0.000	-12.924	-	-12.924
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustment	-	-	-13.192	-	-13.192
• Economic Assumption	-	-	0.268	-	0.268

Change Summary Explanation

FY 2025 decrease of -$13.192 million is due to:
-$11.855 million re-alignment to Operations and Maintenance (O&M) project USRE_2695 for Office of Strategic Capital (OSC) contractor and operational requirements.
-Reduction of $1.337 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact.

-FY 2025 funding increase of $0.268 million is for Economic Assumptions.

The increase of $128.000 million in FY 2026 is for Industrial Base and Innovation in order to sustain the Office of Strategic Capital.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0901579D8Z / *Office of Strategic Capita l (OSC)*	Project (Number/Name) 732 / *Office of Strategic Capital*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
732: *Office of Strategic Capital*	0.000	0.000	99.000	132.640	-	132.640	128.258	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The OSC Program Element funding supports grants, contracts, direct loans, loan guarantees, and other financial means to produce and scale critical technologies vital to national and economic security. OSC directly aligns to the National Defense Strategy through ensuring an enduring advantage in our critical technology areas, increasing integrated deterrence in the economic domain, strengthening partnerships, and developing a scalable and secure supply base for industries of the future.

Investment identification and prioritization is determined in coordination with the Military Services and Joint Staff, alongside principal policy-making leadership, including the Under Secretaries for Research and Engineering, Acquisition and Sustainment, Policy, and Comptroller, and the Director of CAPE. Individual projects will scale proportionally with impact, mission need, and private sector contributions. Projects are selected using a merit-based process that identifies the most promising, innovative, and cost-effective technology opportunities, with an emphasis on transitioning technologies into current or future programs of record.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Critical Technologies Limited Partner Program	-	15.000	28.721
Description: This program licenses and invests via loans, loan guarantees, convertible instruments, grants and / or contracts into Critical Technology (CT) private investment funds. As a result, CT funds increase capital access for companies developing and / or integrating enabling and frontier critical technologies. ***FY 2024 Plans:*** OSC will work with interagency partners and build towards a program capable of seeding that “patient capital” via debt and convertible instruments. The requirement for patient capital has decreased private-sector investment in these critical technologies (i.e., e-commerce received 150 times more investment than quantum in FY 2021). The planning for this project was initiated in FY 2023 in partnership with the Small Business Administration’s Small Business Investment Company (SBIC) program. Planning focused on building the framework for the CT program, including training, digital infrastructure, and process codification. This project will receive its first DoD funding in FY 2024. ***FY 2025 Plans:*** FY 2025 funding will provide the resources necessary to scale and advance work with interagency partners to seed “patient capital” via debt and convertible instruments to catalyze investment in critical technologies. The requirement for more risky, higher cost capital in critical technologies has resulted in a shortfall of private capital investment and this program provides an impactful			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0901579D8Z / *Office of Strategic Capita l (OSC)*	**Project (Number/Name)** 732 / *Office of Strategic Capital*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
remedy to address the shortfall. This project received its first DoD funding in FY 2024. FY 2025 activities will focus on attracting and scaling private capital investment in critical technologies. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 funding increased to resource the growth necessary to expand program investment activities in partnership with interagency partners, including the Small Business Administration's (SBA) Small Business Investment Company (SBIC) Critical Technologies (CT) program.			
Title: Loan Program Office ***Description:*** This program provides direct loans and loan guarantees in Critical Component Technology (CCT) companies to produce and scale critical technologies. CCT companies require significant debt capital to scale manufacturing and deployment of CCTs into critical supply chains. Given the market risk of emerging CCTs, private debt financing is often insufficient for or unavailable to CCT companies, especially compared to other technology sectors. As a result, private companies exhibit declining manufacturing readiness and are experiencing increased offshoring of manufacturing. The availability of OSC debt financing both incents CCT companies to scale manufacturing and attracts private capital into CCT sectors. OSC-issued direct loans and loan guarantees will be underwritten and repaid from private sources, including private commercial cash flows and collateral, with no reliance on federal support. Furthermore, OSC issued credit will not be used to finance capabilities nor will the Federal government be the primary user of any investment. ***FY 2024 Plans:*** In order to appropriately scale and secure the supply chains for critical technology areas vital to national security and to meet NDS mandates, OSC will develop a loan program office that supports capital expenditure financing, project financing, and working capital for companies developing technologies critical to U.S. economic security. The planning for this project was initiated in FY 2023 in partnership with the Export-Import Bank and other federal credit programs. This project will receive its first DoD funding in FY 2024. ***FY 2025 Plans:*** In order to sufficiently scale domestic supply chains for CCT areas vital to national security, OSC will begin obligating loans in FY 2024 to support CCT companies with capital expenditure financing, project financing, and working capital. OSC will continue expanding its capacity to obligate such loans in FY 2025. The credit subsidy rate estimate for FY 2025 is 2.56 percent. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	-	49.200	69.049

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0901579D8Z / *Office of Strategic Capita l (OSC)*	**Project (Number/Name)** 732 / *Office of Strategic Capital*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 funding increased to resource the growth necessary to operationalize and scale the Loan Program Office and its execution of capital expenditure financing, project financing, and working capital for companies developing technologies critical to national security.			
Title: Transition Acceleration Program ***Description:*** Leveraging existing development programs, projects, and warfighter priorities, this project aligns equity-based private investors and public development funding to co-invest in Critical Technology companies that are developing compelling military capabilities with clear pathways to transition to existing or future programs of record. ***FY 2024 Plans:*** In FY 2023, the Office of Strategic Capital (OSC) will be deploying a similar approach with OUSD(R&E) SBIR/STTR funding, expanding to other eligible appropriations in FY 2024. ***FY 2025 Plans:*** OSC will continue to advance current efforts and capture new Service and OSC prioritized efforts to scale investment in FY 2025. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change from FY 2024 to FY 2025.	-	15.000	15.030
Title: Global Technology Scouting and Co-Investment Program ***Description:*** This project invests via loans, loan guarantees, convertible instruments, grant and / or contracts into non-profit technology scouting and investment companies to co-invest in international critical technology companies which support interoperability and integrated deterrence. ***FY 2024 Plans:*** The National Defense Strategy (NDS) directs the DoD to support integrated deterrence in both technology and the economy. In response, the Global Technology Scouting and Co-Investment Program expands OSC's focus in partnership with US partners and allies to scout and scale international critical technology areas and co-invest alongside allies and partners. The planning and experimentation for this program was initiated in FY 2023 and will receive its first dedicated appropriations in FY 2024. ***FY 2025 Plans:*** FY 2025 OSC will continue to advance work with interagency and international partners in prioritized critical technologies sectors. It will prioritize expanding investment to additional partners and technology areas from FY 2024. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	-	15.000	15.030

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0901579D8Z / *Office of Strategic Capita l (OSC)*	**Project (Number/Name)** 732 / *Office of Strategic Capital*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
No change from FY 2024 to FY 2025.			
Title: Investment Prospectus Analysis	-	4.800	4.810
Description: The OSC is responsible for analyzing critical technology areas for prioritization of private capital investment. The OUSD(R&E) determines OSD's critical technology areas and OSC assesses those areas by U.S. comparative advantage and capital availability. ***FY 2024 Plans:*** The assessment, specifically the identification and prioritization of critical technologies, will be published for review by industry, and used to guide OSC investments. Additional research will be performed to assess the analytic framework being developed by OSC, as well as determine new financial tools to increase private sector investment in critical technologies. ***FY 2025 Plans:*** OSC will continue to assess and prioritize critical technologies for use as a guide to frame OSC investments. Research will continue to be performed to assess the analytic framework being developed by OSC, as well as determine new financial tools to increase private sector investment in critical technologies. FY 2025 will continue at steady levels to support the prioritization of critical technology in the out years. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change from FY 2024 to FY 2025.			
Accomplishments/Planned Programs Subtotals	-	99.000	132.640

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• 0901579D8Z: *Operations & Maintenance*	0.000	9.832	11.855	-	11.855	0.000	0.000	0.000	0.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0901579D8Z / *Office of Strategic Capita l (OSC)*	**Project (Number/Name)** 732 / *Office of Strategic Capital*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Critical Technologies Limited Partner Program	MIPR	Various (Army, Navy, Air Force, etc.) : Various	-	-		15.000	Mar 2024	28.721	Mar 2025	-		28.721	Continuing	Continuing	-
Loan Program Office	MIPR	Various (Army, Navy, Air Force, etc.) : Various	-	-		49.200	Mar 2024	69.049	Mar 2025	-		69.049	Continuing	Continuing	-
Transition Acceleration Program	MIPR	Various (Army, Navy, Air Force, etc.) : Various	-	-		15.000	Mar 2024	15.030	Mar 2025	-		15.030	Continuing	Continuing	-
Global Technology Scouting and Co-Investment Program	MIPR	Various (Army, Navy, Air Force, etc.) : Various	-	-		15.000	Mar 2024	15.030	Mar 2025	-		15.030	Continuing	Continuing	-
		Subtotal	-	-		94.200		127.830		-		127.830	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Investment Prospectus Analysis	MIPR	Various (Army, Navy, Air Force, etc.) : Various	-	-		4.800	Mar 2024	4.810	Mar 2025	-		4.810	Continuing	Continuing	-
		Subtotal	-	-		4.800		4.810		-		4.810	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		99.000		132.640		-		132.640	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0901579D8Z / *Office of Strategic Capital (OSC)*	**Project (Number/Name)** 732 / *Office of Strategic Capital*

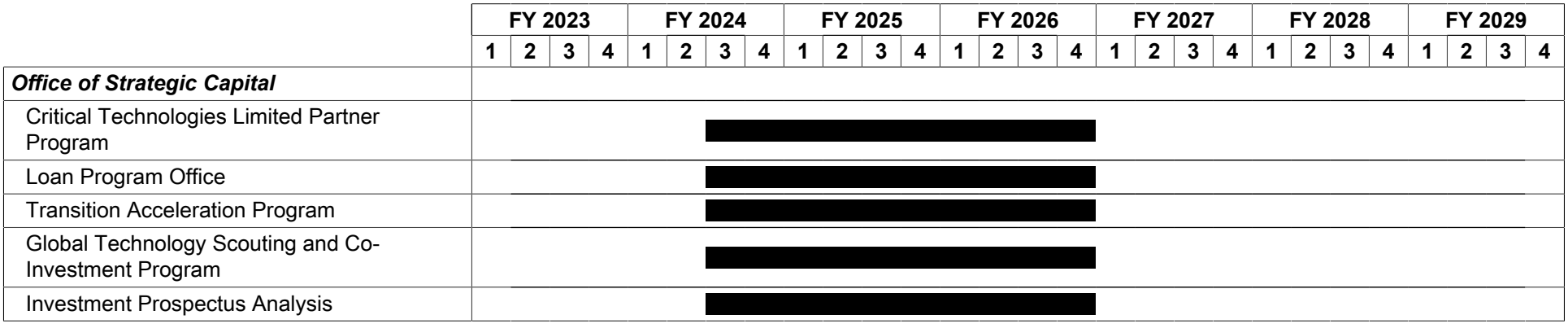

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0901579D8Z / *Office of Strategic Capital (OSC)*	**Project (Number/Name)** 732 / *Office of Strategic Capital*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Office of Strategic Capital				
Critical Technologies Limited Partner Program	3	2024	4	2026
Loan Program Office	3	2024	4	2026
Transition Acceleration Program	3	2024	4	2026
Global Technology Scouting and Co-Investment Program	3	2024	4	2026
Investment Prospectus Analysis	3	2024	4	2026

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604123D8Z *I Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	274.853	615.246	371.833	-	371.833	380.851	378.872	383.250	392.864	Continuing	Continuing
067: *AI/ML Demonstration & Validation*	0.000	274.853	615.246	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	890.099
081: *AI/ML Scaffolding*	0.000	0.000	0.000	139.909	-	139.909	85.354	84.993	95.763	99.724	Continuing	Continuing
082: *Digital Talent Management*	0.000	0.000	0.000	23.031	-	23.031	24.198	15.940	13.011	13.535	Continuing	Continuing
083: *Foundational Enablers*	0.000	0.000	0.000	197.511	-	197.511	259.313	266.437	262.748	267.246	Continuing	Continuing
084: *Improved Data Quality*	0.000	0.000	0.000	11.382	-	11.382	11.986	11.502	11.728	12.359	Continuing	Continuing

Note

New Start (Y/N): No

Beginning in FY 2025 Program Element funding was realigned under four new project codes to correctly align PE funding in support of Chief Digtial and Artificial Intelligence Officer (CDAO) priorities. The new project codes are: (1) P081 AI/ML Scaffolding; (2) P082 Digital Talent Management; (3) P083 Foundational Enablers; and (4) P084 Improved Data Quality. The prior year funding project codes did not continue after FY 2024 though the overarching goals of the program element are the same. The four new project codes refocus the PE and provide traceability to the current priorities of the CDAO.

A. Mission Description and Budget Item Justification

The Chief Digital and Artificial Intelligence Officer (CDAO) supports the Department's initiatives to build enduring advantage and build a resilient Joint Force and Defense ecosystem. The CDAO is responsible for strengthening and integrating data, artificial intelligence, and digital solutions in the Department in support of the National Defense Strategy (NDS) and Section 1513 of the National Defense Authorization Act (NDAA) for FY 2023. The functions of the CDAO are as follows: lead and oversee the DoD’s strategy development and policy formulation for data, analytics, and AI; break down barriers to data and AI adoption within DoD institutional processes; create enabling digital infrastructure and services that support Components’ development and deployment of data, analytics, AI, and digital-enabled solutions; selectively scale proven digital and AI-enabled solutions focused on enterprise and joint use cases; and surge digital services for rapid response to crises and emergent challenges. This also requires CDAO to continue priority projects that align to the mission. This includes expanding the enterprise data repository, establishing a responsible AI ecosystem, executing the AI and Data Accelerator (ADA) initiative, and developing a Data, Analytics, and AI Adoption Strategy. These various lines of effort will support the overarching mission of accelerating the Department’s adoption of data, analytics, and AI to preserve decision advantage across the Joint Force.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604123D8Z *I Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	278.340	615.246	595.852	-	595.852
Current President's Budget	274.853	615.246	371.833	-	371.833
Total Adjustments	-3.487	0.000	-224.019	-	-224.019
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	6.700	-			
• SBIR/STTR Transfer	-10.160	-			
• WHS Transfer	-0.027	-	-	-	-
• Realignments	-	-	-224.019	-	-224.019

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 067: *AI/ML Demonstration & Validation*		
Congressional Add: *CDAO - DEM / VAL Activities*	1.513	-
Congressional Add Subtotals for Project: 067	1.513	-
Congressional Add Totals for all Projects	1.513	-

Change Summary Explanation

FY 2023 SBIR/SSTR transfer -$10.160; WHS transfer -$0.027.

FY 2025 decrease of $224.019 is the result of transfer to JADC2 (PE0604122D8Z) in support of Congressional guidance.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	Project (Number/Name) 067 / *AI/ML Demonstration & Validation*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
067: *AI/ML Demonstration & Validation*	0.000	274.853	615.246	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	890.099
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Beginning in FY 2025 Program Element funding was realigned under four new project codes to correctly align PE funding in support of Chief Digital and Artificial Intelligence Officer (CDAO) priorities. The new project codes are: (1) P081 AI/ML Scaffolding; (2) P082 Digital Talent Management; (3) P083 Foundational Enablers; and (4) P084 Improved Data Quality. The prior year funding project codes did not continue after FY 2024 though the overarching goals of the program element are the same. The four new project codes refocus the PE and provide traceability to the current priorities of the CDAO.

A. Mission Description and Budget Item Justification

The functions of the CDAO are as follows: lead and oversee the DoD's strategy development and policy formulation for data, analytics, and AI; break down barriers to data and AI adoption within DoD institutional processes; create enabling digital infrastructure and services that support Components' development and deployment of data, analytics, AI, and digital-enabled solutions; selectively scale proven digital and AI-enabled solutions focused on enterprise and joint use cases; and surge digital services for rapid response to crises and emergent challenges. This also requires CDAO to integrate the capabilities, personnel, resources, and governance of its constituent organizations, while concurrently focusing on priority projects that align to CDAO's mission. This includes expanding the enterprise data repository; establishing a responsible AI ecosystem; executing the ADA initiative; and developing a Data, Analytics, and AI Adoption Strategy. These various lines of effort will support the overarching mission of accelerating the Department's adoption of data, analytics, and AI to preserve decision advantage across the Joint Force.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: CDAO: Building Resiliency and Readiness (USD(P&R)) ADVANA ***Description:*** The GAO report 18-586R on Military Aviation Mishap findings showed that there are gaps on OUSD(P&R)'s approach for collecting, reporting, and analyzing mishap data due to lack of standardized reporting elements across the military departments' safety centers. Advana is a technology platform that not only houses a collection of enterprise data, but expands the boundaries of a standard data warehouse by arming military and business decision-makers with decision support analytics, visualizations, and data tools. This project will support the Joint Safety Council, once established, to aid in the assessment of Services' aviation mishap data supporting improvement in aviation safety.	1.900	-	-
Title: Chief Digital and Artificial Intelligence Officer ***Description:*** The CDAO will continue to lead and oversee the DoD's strategy development and policy formulation for data, analytics, and AI; break down barriers to data and AI adoption within DoD institutional processes; create enabling digital	158.832	420.939	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 067 / *AI/ML Demonstration & Validation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
infrastructure and services that support Components' development and deployment of data, analytics, AI, and digital-enabled solutions; selectively scale proven digital and AI-enabled solutions focused on enterprise and joint use cases; and surge digital services for rapid response to crises and emergent challenges. This also requires CDAO to integrate the capabilities, personnel, resources, and governance of its constituent organizations, while concurrently focusing on priority projects that align to CDAO's mission. This includes expanding the enterprise data repository; establishing a responsible AI ecosystem; executing the ADA initiative; and developing a Data, Analytics, and AI Adoption Strategy. These various lines of effort will support the overarching mission of accelerating the Department's adoption of data, analytics, and AI to preserve decision advantage across the Joint Force. ***FY 2024 Plans:*** In FY 2024, the CDAO will continue to make progress in transforming the Department through AI, and understanding the importance of remaining agile and adapting to meet diverse needs. The CDAO's functions and products will be tailored to meet these needs, and the personnel supporting these efforts are the CDAO's front-line of support to DoD components. The CDAO will continue to build on the Responsible AI eco-system to ensure the ethical, legal and moral foundations of our AI activities is reflected in every step of AI Development and implementation processes. CDAO will continue to work to ensure that RAI flows through AI Assurance processes. The CDAO team will work with Joint, Service, and partner platforms to develop a long-term strategy to ensure that Enterprise Capabilities meets the Department's needs. The CDAO will take the critical, tested and proven enterprise platforms and capabilities, such as access controls, data and service integration, and AL/MLOps pipeline to continue development of foundational services to be shared and used by the Department. This effort will facilitate the creation of a superhighway of countless platforms and systems to move data, analytics, capabilities, and integrate enterprise services to enable the acceleration of AI across the Department. FY 2024 growth will support the following: - Development of campaigning decision support tools for DoD's Dynamic Campaigning efforts - Provide high-performance computing resources for AI test and evaluation - Development of tools to continuously assess AI performance - Development of AI interoperability standards - Development of AI research and development hubs - Creation of a center for AI assurance expertise			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 067 / *AI/ML Demonstration & Validation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Development of a containerized AI tool platform, a centralized library of AI packages, and a centralized library of foundational models - Development of AI test and evaluation courses at DAU and an AI training platform - DoD digital language proficiency incentives - Analytics capabilities of the Artificial Intelligence and Data Accelerator (ADA) initiative at the Combatant Commands - Three year pilot effort to provide embedded analytics support teams at the Services, Principal Staff Assistants, and select Defense Agencies and Field Activities - Three year development and experimentation of JADC2 capabilities initiated by INDOPACOM, NORTHCOM and EUCOM to operationalize a data integration layer for use across all Combatant Commands - Global Information Dominance Experiments (GIDE) to assess progress for operational, strategic and global applications ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Beginning in FY 2025 Program Element funding was realigned under four new project codes to correctly align PE funding in support of Chief Digtial and Artificial Intelligence Officer (CDAO) priorities. The new project codes are: (1) P081 AI/ML Scaffolding; (2) P082 Digital Talent Management; (3) P083 Foundational Enablers; and (4) Improved Data Quality. The prior year funding project codes did not continue after FY 2023 though the overarching goals of the program element are the same. The four new project codes refocus the PE and provide traceability to the current priorities of the CDAO. FY 2025 decrease is also the result of reprogramming Joint All-Domain Command & Control (JADC2)-related funding from this PE to PE 0604122D8Z in support of Congressional guidance.			
Title: Artificial Intelligence and Data Accelerator (ADA) ***Description:*** ADA is a DSD initiative to accelerate the deployment of data-enabled automation platform and development capabilities to each CCMD. ADA is designed to help CCMDs determine their long-term data and AI capability and needs and whether existing platforms can be scaled to address them. This funding addresses the AI component of ADA which will enable AI capability development and demonstration across three subcomponents: AI-Enabled Joint Operating System; CCMD Experimentation; and AI Integration Service Programs. The ADA effort was directed by the DSD to accelerate the deployment of data- enabled automation platforms and development capabilities to each CCMD. It is designed to transform how CCMDs conduct globally-integrated data management, including both warfighting and business decision analytics, and provide a data foundation to enable workflow and command and control automation capabilities. ADA is a campaign of learning to identify data and joint all domain command and control (JADC2) operational needs, discover obstacles to implementation of modern capabilities, and develop joint solutions. The ADA initiative is led by the CDAO.	76.790	76.790	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 067 / *AI/ML Demonstration & Validation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: In FY 2024, CDAO plans to continue to build ADA support and partnerships to solve data, process, and infrastructure challenges at scale. ADA accomplishes this via on-site data personnel to augment CCMD capabilities, access to artificial intelligence (AI) experts to deploy tailored process solutions, deep reach back to DoD enterprise services, and close integration with the JADC2 experimentation community. ADA seeks to learn fast and scale outcomes broadly. As effective solutions are developed in one CCMD, they will be made available across the enterprise for further development and implementation. ADA is not solely focused on capability delivery, but designed to address both materiel and non-materiel challenges to data management. ADA discovery efforts across a range of capability areas include workforce development, acquisition practices, software modernization, IT infrastructure, and outdated processes are included. The ADA team will provide recommendations to the CDAO, JADC2 partners, and other governance bodies as appropriate. The ADA plan envisions a modest level of data management support for each CCMD by deploying the Advana and intelligence support platforms to each CCMD and the Joint Staff and embedding teams of data, analytics, and AI experts within the CCMDs to identify and resolve use cases. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Beginning in FY 2025 Program Element funding was realigned under four new project codes to correctly align PE funding in support of Chief Digtial and Artificial Intelligence Officer (CDAO) priorities. The new project codes are: (1) P081 AI/ML Scaffolding; (2) P082 Digital Talent Management; (3) P083 Foundational Enablers; and (4) Improved Data Quality. The prior year funding project codes did not continue after FY 2023 though the overarching goals of the program element are the same. The four new project codes refocus the PE and provide traceability to the current priorities of the CDAO. FY 2025 decrease is also the result of reprogramming Joint All-Domain Command & Control (JADC2)-related funding from this PE to PE 0604122D8Z in support of Congressional guidance.			
Title: Joint Artificial Intelligence (AI) Test and Evaluation (T&E) Infrastructure Capability (JATIC)	12.727	18.081	-
Description: At the direction of the DSD and recommendation of the NSCAI report, CDAO established the JATIC to enable enterprise-scale rapid development, testing, and deployment of AI capabilities across warfighting domains. The JATIC will enable enterprise-scale rapid development, testing, and deployment of AI capabilities across warfighter domains and will migrate the DoD towards Joint All Domain Test & Evaluation. This funding will support JATIC foundational programs such as: Adversarial AI T&E, AI/ML model card standards, Scalable AI Test Harness, CDAO data repository, data service marketplace, and ontologies. ***FY 2024 Plans:*** FY 2024 funding will be utilized to support JATIC efforts to include the T&E Factory, Scalable AI T&E Harness, Adversarial AI T&E, AI/ML model cards, as well as a data repository, data service marketplace, and ontologies. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 067 / *AI/ML Demonstration & Validation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Beginning in FY 2025 Program Element funding was realigned under four new project codes to correctly align PE funding in support of Chief Digtial and Artificial Intelligence Officer (CDAO) priorities. The new project codes are: (1) P081 AI/ML Scaffolding; (2) P082 Digital Talent Management; (3) P083 Foundational Enablers; and (4) Improved Data Quality. The prior year funding project codes did not continue after FY 2023 though the overarching goals of the program element are the same. The four new project codes refocus the PE and provide traceability to the current priorities of the CDAO. JATIC funding is now aligned to P081 AI/ML Scaffolding.			
Title: Chief Digital and Artificial Intelligence Officer - Advana ***Description:*** The Advancing Analytics (Advana) platform is the single enterprise authoritative data management and analytics platform for the Secretary of Defense, Deputy Secretary of Defense, and Principal Staff Assistants (PSAs), with inputs from all DoD Components in alignment with the 5 May 2021 Creating Data Advantage memorandum signed by the Deputy Secretary of Defense. In FY 2024, CDAO will continue to develop and expand existing platform infrastructure, operations, and technical architecture to meet senior leadership and customer demand as outlined in Section 1513 of the National Defense Authorization Act for FY 2023. This tool suite provides Senior Leaders near real time awareness of the entire deployment process (planning stage through execution to closure) for people, equipment, and supplies within a specific Area of Responsibility. The crisis in Ukraine created a critical, time-sensitive demand for further rapid data aggregation and ongoing development support to inform senior leader decision-making on deployment of personnel and equipment, including Non-Combatant Evacuation, Covid-19 considerations, and humanitarian aid, among other potential problem sets. Additional service support resources are needed for 24/7 operating demands required for future incidents, and globally distributed staff embedded within several Combatant Commands. This work also results in additional infrastructure, license, and labor costs. Advana must also expand to environments such as (Joint Worldwide Intelligence Communication System) to support data needs and operations at higher classification levels. The benefit of having preplanned, established frameworks and mechanisms for data interoperability between DoD components and other agencies can increase speed to insight and relevance for critical information necessary for time constrained decision support. ***FY 2024 Plans:*** In FY 2024, the CDAO will continue to make progress in transforming the Department through AI, and understanding the importance of remaining agile and adapting to meet its diverse needs. Specifically, CDAO will continue to expand the existing Advana platform infrastructure, operations, and technical architecture to meet senior leadership and customer demand. CDAO will continue to expand its current inventory of automated data connections within Advana by establishing new connections to Authoritative Data Sources (ADS) as prioritized by SD/DSD, OSD senior leadership, Joint Staff, the Military Services, and the	23.091	99.436	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 067 / *AI/ML Demonstration & Validation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Combatant Commands (CCMDs). CDAO and the Advana team will continue to provide readily available access to authoritative data for informed decision-making for DoD stakeholders and senior leaders. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Beginning in FY 2025 Program Element funding was realigned under four new project codes to correctly align PE funding in support of Chief Digtial and Artificial Intelligence Officer (CDAO) priorities. The new project codes are: (1) P081 AI/ML Scaffolding; (2) P082 Digital Talent Management; (3) P083 Foundational Enablers; and (4) Improved Data Quality. The prior year funding project codes did not continue after FY 2023 though the overarching goals of the program element are the same. The four new project codes refocus the PE and provide traceability to the current priorities of the CDAO. Advana funding is now aligned to P083 Foundational Enablers and P084 Improved Data Quality.			
Accomplishments/Planned Programs Subtotals	273.340	615.246	-

	FY 2023	FY 2024
Congressional Add: CDAO - DEM / VAL Activities	1.513	-
FY 2023 Accomplishments: FY 2023 increase will support vertical munitions and fuel data integration pilots, as well efforts to deliver tactical artificial intelligence at Combatant Commands.		
Congressional Adds Subtotals	1.513	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The CDAO acquisition, management, and contracting strategy follows guidance outlined in the DoD 5000 series directives, Federal Acquisition Regulation (FAR) and FAR supplement policies and procedures. Management uses project management tools and meetings to ensure delivery of stated capabilities and performance criteria.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 067 / *AI/ML Demonstration & Validation*

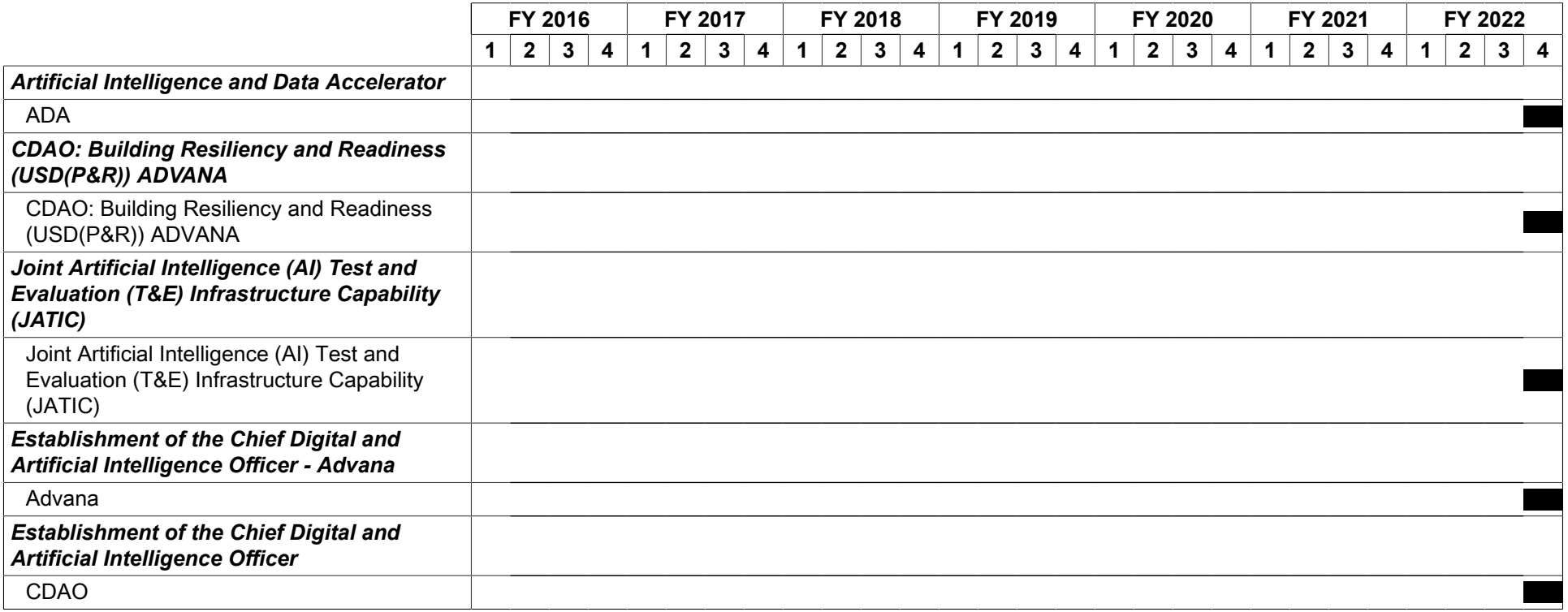
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	C/Various	TBD : TBD	-	274.853		615.246		-		-		-	Continuing	Continuing	-
		Subtotal	-	274.853		615.246		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	274.853		615.246		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 067 / *AI/ML Demonstration & Validation*



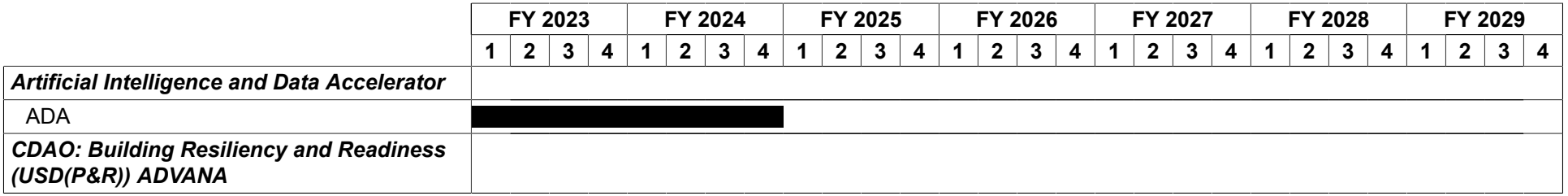


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 067 / *AI/ML Demonstration & Validation*

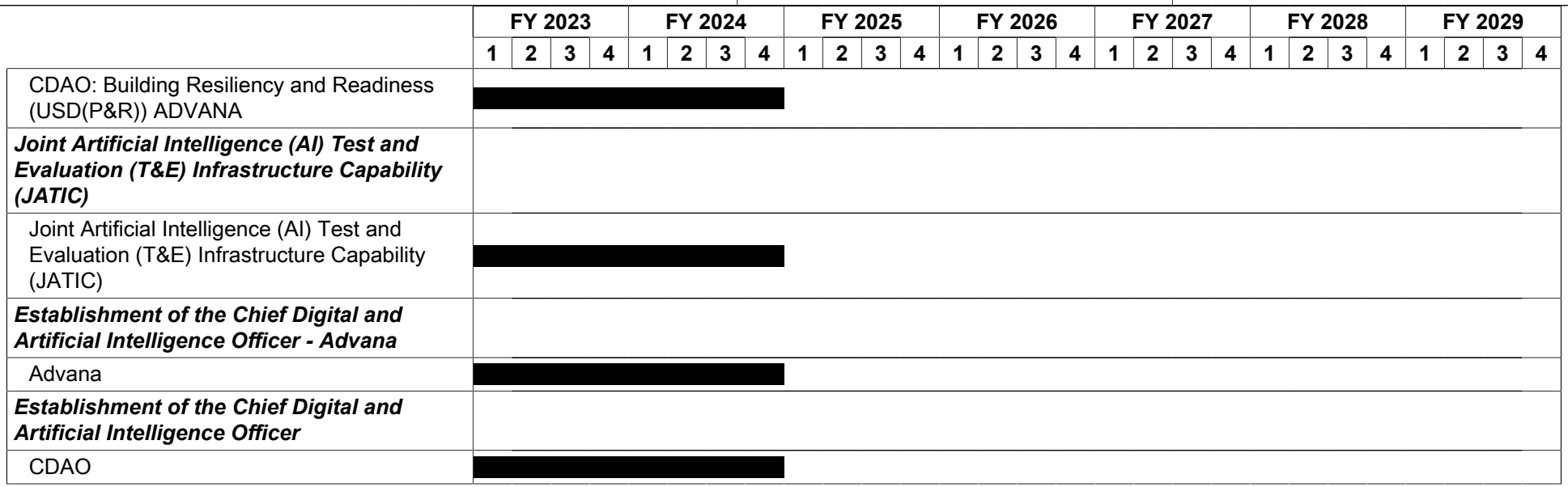


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 067 / *AI/ML Demonstration & Validation*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Artificial Intelligence and Data Accelerator				
ADA	4	2022	4	2024
CDAO: Building Resiliency and Readiness (USD(P&R)) ADVANA				
CDAO: Building Resiliency and Readiness (USD(P&R)) ADVANA	4	2022	4	2024
Joint Artificial Intelligence (AI) Test and Evaluation (T&E) Infrastructure Capability (JATIC)				
Joint Artificial Intelligence (AI) Test and Evaluation (T&E) Infrastructure Capability (JATIC)	4	2022	4	2024
Establishment of the Chief Digital and Artificial Intelligence Officer - Advana				
Advana	4	2022	4	2024
Establishment of the Chief Digital and Artificial Intelligence Officer				
CDAO	4	2022	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	Project (Number/Name) 081 / *AI/ML Scaffolding*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
081: *AI/ML Scaffolding*	0.000	0.000	0.000	139.909	-	139.909	85.354	84.993	95.763	99.724	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

Beginning in FY 2025 funding was realigned under four new project codes to correctly align PE funding in support of Chief Digital and Artificial Intelligence Officer (CDAO) priorities. The project is continuation of the activities that was captured under AI/ML Demonstration & Validation from FY 2024

A. Mission Description and Budget Item Justification

The mission of the AI/ML Scaffolding project is developing, providing, brokering, and advising on the infrastructure, data, tools, services and best practices needed to accelerate appropriate AI/ML development and adoption.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: AI/ML Scaffolding	-	-	139.909
Description: CDAO's AI/ML Scaffolding efforts include: * AI Test & Evaluation and Assurance Case Best Practices: Tailorable T&E frameworks that balance structure with flexibility to provide guidance on critical AI testing challenges, including: - AI T&E frameworks to support development of AI T&E policy and guidance, and T&E strategies and plans for systems with AI. - Example Assurance Cases - DoD LLM Benchmarks - Frameworks will be publicly releasable and made available to customers through CDAO and DoD publication means. Assurance Case examples and DoD LLM Benchmarks will be released at the classification level of the systems and data used to generate them * Alpha-1: provides enterprise services for DoD AI/ML development to give a baseline to DoD AI/ML projects. Services provided by Alpha-1 will be employed at the discretion of the partnering projects. CDAO will fund and provide some amount of capabilities, partnering projects which can elect to augment with additional funds or capabilities. * Digital Ecosystem Reference Architecture Model (DREAM): effort to continuously deliver AI/ML to mission spaces. - DREAM exists to address major impediments to the adoption of AI/ML across the department, including DoD's lack of relevant technical capability, need for continuous capability update and awareness of technical innovation. - DREAM provides strategic technical awareness of relevant technologies that support the adoption of AI/ML across the DoD. - DREAM provides a reference architecture model for continuous delivery of assured AI/ML to mission spaces.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 081 / *AI/ML Scaffolding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
* Enterprise Platforms & Capabilities (EPC) AI/ML Operations: implements the core Advana principles to bring Data and Analytics to the DoD. It provides: - Scalable compute, access to open source and industry leading packages, models, and programming languages - Ability to build, deploy, test, maintain, and monitor machine learning models built on top of live enterprise data - Access to foundational models and catalog of production/available models - Utilization of various development environments, tools, and platforms - Assessment of Large Language Models (LLMs) in accordance with CDAO guidance * Joint AI Test Infrastructure Capability (JATIC): At the direction of the DSD and recommendation of the NSCAI report, CDAO established the JATIC to enable enterprise-scale rapid development, testing, and deployment of AI capabilities across warfighting domains. The JATIC will enable enterprise-scale rapid development, testing, and deployment of AI capabilities across warfighter domains and will migrate the DoD towards Joint All Domain Test & Evaluation. This funding will support JATIC foundational programs such as: Adversarial AI T&E, AI/ML model card standards, Scalable AI Test Harness, CDAO data repository, data service marketplace, and ontologies. * Perceptor: On behalf of the DoD enterprise, Perceptor will pursue the following needs: - Accelerate the operationalization of AI systems - Increase analytic and AI reuse - Improve AI performance in production environments and reduce risk of AI degradation over time - Integrate AI insight in existing tools and interfaces - Operationalize AI inference on data streams and at the edge / ingest * Continuous Operational Behavior, Robustness, and Resilience Assessment (COBRRA): provides tools for continuous monitoring of AI models after deployment to ensure continuous validation and verification of performance characteristics among changing environmental and operational conditions * Responsible AI (RAI): RAI is critical to decision makers, warfighters, industry partners, and public trust in the technologies that the Department develops and deploys. The CDAO RAI effort: - Operationalizes the DoD AI Ethical Principles - Oversees the Deputy Secretary of Defense's RAI Strategy and Implementation Pathway (S&IP) - Coordinates with offices throughout the DoD and federal government - Integrates RAI to build capacity of best practices and tools for AI * Smart Sensor: Smart Sensor is an effort to develop an AI and autonomy software effort enabling Group 5 UAS to conduct surveillance and reconnaissance missions in C2 and GPS-denied environments. This effort will enable autonomous, persistent, airborne surveillance and reconnaissance in contested environments via AI-enabled sensor fusion. * Test & Evaluation Infrastructure Gap Studies: CDAO's Test & Evaluation Infrastructure Gap Studies provide an evidence-based assessment of both the current state and desired state of DoD's T&E ecosystem necessary for accomplishing robust and			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 081 / *AI/ML Scaffolding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
efficient testing of AIESs. This product series covers T&E broadly, and future work will cover resource gaps preventing sufficient evaluations of Adversarial AI. These studies provide tailored, tangible recommendations for infrastructure investments. ***FY 2025 Plans:*** In FY 2025 CDAO's AI/ML Scaffolding efforts in the PE will continue its work from FY 2024: * AI T&E and Assurance Case Best Practices - DoD LLM Benchmark Example - DoD LLM Benchmark Guide - AI Operational Testing Framework - AI Systems Integration Testing Framework - The FY 2025 AI T&E and Assurance Case Best Practices effort is aimed at developing guidance towards the T&E of novel technologies and the implementation of AI into systems with greater complexity and higher consequence. Beginning with LLMs, the CDAO's focus is ensuring that the Department has the sufficient guidance on their appropriate usage, and an understanding of their novel risks. Within AI Operational and Systems Integration testing frameworks, the CDAO will provide guidance and example assurance cases in the employment of AI into operator-AI workflows, and complex systems of systems. * DREAM: - Reference Architecture Model development: Develop core principles and design and architect relevant AI/ML scaffolding capabilities based on survey results and mission needs from across the department - DoD AI Federation Activities: Establish CTO-peer touchpoints within related organizations in OSD, components and services, and industry partners to share and discuss strategic needs and approach - Vendor Engagement and Awareness: Leverage tech-focused vendor panels to understand trends and capabilities and develop and share strategic insights with CDAO leadership and department federates - - Enabling Activities: Support development of the reference architecture model, through survey execution and inventory review, experiment design and execution of potential data patterns and management capabilities, policy development and execution - Provide much needed administrative and program management support * EPC AI/ML Operations: - Ability to continuously monitor, retrain, and deploy machine learning models - Safely and securely utilize open source tools and foundational models - Document and catalog production models and promote efficient reuse - Provide decision advantage that's enabled by AI/ML to organizations that currently lack the capability (Models-as-a-Service) * JATIC: - Scalable AI T&E Harness - Acquire automated, scalable, enterprise-level TEVV tools for evaluating standardized model performance and data quality; develop performance benchmarks for well-known modalities and tasks.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 081 / *AI/ML Scaffolding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Adversarial AI T&E - Building on the work within DARPA GARD, JATIC efforts will focus on developing realistic adversarial AI techniques that have real utility within integrated cyber-physical red teams - AI/ML model cards - Creating model cards, in collaboration with CDAO Responsible AI, to communicate key model / dataset information to key AI/ML stakeholders, providing them with the relevant information they need to make decisions. - Data repository, data service marketplace, and ontologies - Standards, protocols, and ontologies for common AI/ML tasks, including CV and FMV have been created. FY 2025 effort will create ontologies for DoD-unique applications and the data repository to enable them. * Perceptor: - Core Software Support: Lifecycle management of internal tools, libraries, and line code, performance enhancement, user interface improvements, documentation and version control - Deployment Integration: Support to mission partners standing up or moving instances of Perceptor, upgrade operations, data source connection support, analytic containerization and repository support - Customer Engagement: Use case review and advice, user feedback to developers and program managers for rapid iteration and deployment, community building for analytic and data connector sharing - Cybersecurity: Generation of artifacts to support accreditation and approval to operate decisions, DoD RMF certification requirements, patching and container hardening * COBRRA: - Operational model monitoring: Monitoring of model performance on operational systems, after deployment, to ensure continuous assurance of behavior, robustness, resilience, and performance of our deployed models - Data drift identification: software tools to identify when data seen in operations has drifted from the data which a model was trained and tested on, in which case, the model's predictions may no longer hold or be at risk of failure - Continuous validation learning systems: Many of our future deployed AI systems will be required to continuously learn and adapt to their environment in order to keep up with the speed of future warfare. COBRRA will provide lightweight software, deployable at the edge, to continuously assure these updates to learning systems - Outlier detection: COBRRA will provide live outlier detection to provide operators with warnings for outlier situations when they should be wary of model predictions or actions * Responsible AI: - RAI Tools: - RAI Knowledge Sharing Tools (RAI Portal, Use Case Repository, Incident Repository) - RAI Governance Tools (Executive Dashboard, RAI Process Flow Tool, RAI Program Management Tool, RAI Budgeting Tool) - Auditability Tools (Bias Bounty, System Cards) - HSI/HMT Tools (HMT Red Teaming Guidebook and Tools, BlueSky Integration)			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 081 / *AI/ML Scaffolding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Tool Integration (Explainability, OOD, Competence Estimation, Privacy Risk, Robustness, Algorithmic Recourse, Imitation/ Extraction Risk, Continuous Monitoring Tools) - RAI Best Practices : - RAI Framework (RAI Toolkit) - RAI Risk Resources (Risk Management Framework and Profiles Development, Civilian Harms and Mitigation Project, Harms/ Impact Analysis, High Consequence Risk & Tradeoffs Framework) - Integrating Generative AI Responsibly - RAI Workforce and Organization Development (RAI 101, RAI Awareness Training) - RAI Integration and Outreach: - Partnerships and Policy (Mission Partnerships [including Integration and Piloting of RAI Tools], RAI Data and AI Review Board, RAI Community of Interest, RAI Academic Consortium) * Smart Sensor: - Sensor Autonomy: AI-enabled sensor control - Non-GPS Position, Navigation & Timing: Geo-registration, visual navigation, alternate navigation - AI-enabled reasoning - Autonomy Framework: Autonomy control station and platform communications - Perception: Automated target recognition, tracking & fusion * T&E Infrastructure Gap Studies: - National AI T&E Infrastructure Capability (NAITIC) Gap Study (aka T&E Gap Study); data collection and analyses include: - Enterprise AI T&E Goals, including rationales - Demand for AI T&E infrastructure capabilities, primarily from programs, Services, and others looking to deliver AI-enabled capabilities (AIECs) - Baseline Supply of AI T&E infrastructure capabilities available to meet the demand, encompassing both current (descriptive) and future (normative) views - Gaps between current and future demand and supply of AI T&E infrastructure to meet government test goals - Actions that can be taken to meet test objectives via investments to close gaps in AI T&E infrastructure - AI Cyber Study to evaluate the cybersecurity posture of the infrastructure used to develop, test, and deploy artificial intelligence (AI); catalog AI services and infrastructure, evaluate risks, and recommend appropriate changes; consider conducting direct cybersecurity posture assessments and red teaming of a subset of this infrastructure.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 081 / *AI/ML Scaffolding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Starting in FY 2025, funding was realigned from P067 AI/ML Demonstration & Validation. Some budget increases in AI T&E and Assurance Case Best Practices and JATIC were highlighted in the FY 2025 base plans.			
Accomplishments/Planned Programs Subtotals	-	-	139.909

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 081 / *AI/ML Scaffolding*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AI/ML Scaffolding	C/Various	AI/ML Scaffolding : Various	-	-		-		139.909		-		139.909	Continuing	Continuing	-
		Subtotal	-	-		-		139.909		-		139.909	Continuing	Continuing	N/A

Remarks

The activities include, not limited to Alpha-1, Responsible AI, Smart Sensor, Perceptor, Digital Ecosystem Reference Architecture Model (DREAM), JATIC, T&E Infrastructure Gap Studies, AI T&E and Assurance Case Best Practices, Maritime Object Detection (MOD), COBRRA, and AI/ML operations.
Beginning in FY 2025 Program Element funding was realigned and the schedule reflects the activity under the realigned PE even though these activities were conducted previously (therefore these activities are not new starts).

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		139.909		-		139.909	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 081 / *AI/ML Scaffolding*

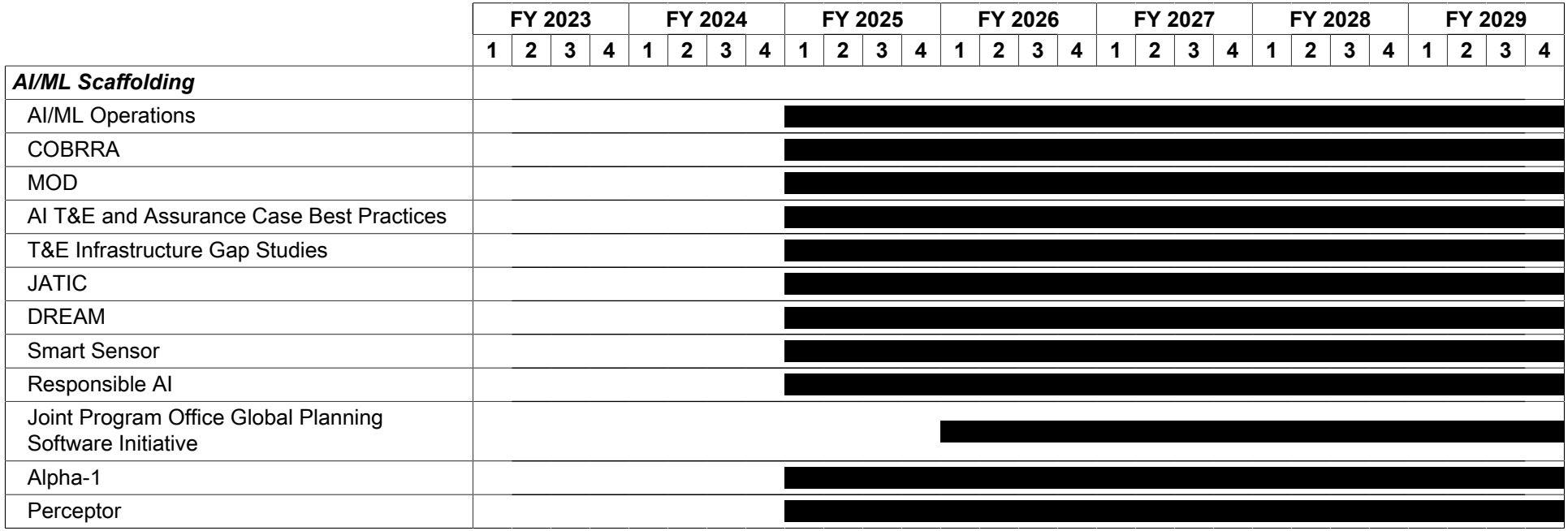


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 081 / *AI/ML Scaffolding*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
AI/ML Scaffolding				
AI/ML Operations	1	2025	4	2029
COBRRA	1	2025	4	2029
MOD	1	2025	4	2029
AI T&E and Assurance Case Best Practices	1	2025	4	2029
T&E Infrastructure Gap Studies	1	2025	4	2029
JATIC	1	2025	4	2029
DREAM	1	2025	4	2029
Smart Sensor	1	2025	4	2029
Responsible AI	1	2025	4	2029
Joint Program Office Global Planning Software Initiative	1	2026	4	2029
Alpha-1	1	2025	4	2029
Perceptor	1	2025	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	Project (Number/Name) 082 / *Digital Talent Management*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
082: *Digital Talent Management*	0.000	0.000	0.000	23.031	-	23.031	24.198	15.940	13.011	13.535	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

Beginning in FY 2025 funding was realigned under four new project codes to correctly align PE funding in support of Chief Digital and Artificial Intelligence Officer (CDAO) priorities.

A. Mission Description and Budget Item Justification

The mission of the Digital Talent Management project is to lead, oversee, support, empower, and educate the data, analytics, and AI workforce as the OSD Functional Community Manager (FCM) – this workforce is referred to as the Defense Digital Workforce (DDW).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Digital Talent Management Efforts	-	-	23.031
Description: CDAO's Digital Talent Management program includes five core lines of effort (projects): - FCM/DDW: Lead & oversee the Department's data, analytics, and AI workforce; Implement work-role coding; experiment, learn, share best practices (Pilots) - ANALYTICS & PLANNING: Analyze digital workforce supply, demand, trends and critical gaps - DEVELOPMENT: Create learning journeys and career pathways for digital practitioners; Provide data and AI education to senior leaders and all DoD personnel - DIGITAL COMMONS: Establish a ”one-stop” Community of Practice with tools and resources - DIGITAL FUTURES: Cultivate tomorrow’s DoD Digital Warfighters through internal and external partnerships ***FY 2025 Plans:*** In FY 2025 the CDAO will continue its Digital Talent Management program: - Experiment: Work with DoD partners to learn digital talent management best practices - Understand: Analyze digital workforce supply, demand, trends and critical gaps - Guide: Publish a series of best practices playbooks and provide resources for the community - Develop: Create learning journeys and support career pathways for advancement - Change: Tackle policy, barriers and blockers - Educate: Provide data and AI education to senior leaders and all DoD personnel			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 082 / *Digital Talent Management*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Maintain: Be an advocate for the digital workforce ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Starting in FY 2025, funding was realigned from P067 AI/ML Demonstration & Validation.			
Accomplishments/Planned Programs Subtotals	-	-	23.031

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	Project (Number/Name) 082 / *Digital Talent Management*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Digital Talent Management	C/Various	Digital Talent Management : Various	-	-		-		23.031		-		23.031	Continuing	Continuing	-
		Subtotal	-	-		-		23.031		-		23.031	Continuing	Continuing	N/A

Remarks

Beginning in FY 2025 Program Element funding was realigned and the schedule reflects the activity under the realigned PE even though these activities were conducted previously (therefore these activities are not new starts).

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		23.031		-		23.031	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 082 / *Digital Talent Management*

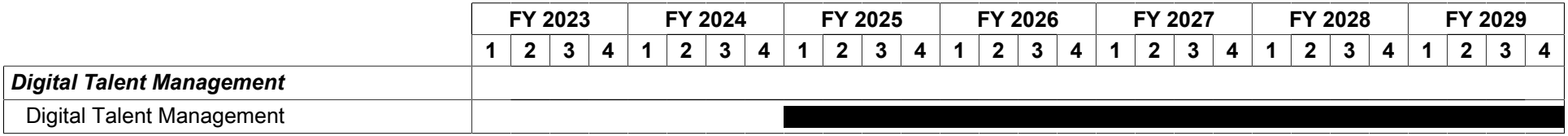


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 082 / *Digital Talent Management*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Digital Talent Management				
Digital Talent Management	1	2025	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	Project (Number/Name) 083 / *Foundational Enablers*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
083: *Foundational Enablers*	0.000	0.000	0.000	197.511	-	197.511	259.313	266.437	262.748	267.246	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2024, The CDAO completed the following activities on the Acquisition Ecosystem:
-- Tradewinds/AcqBot -- IL5 Deployment; Senior Leader Dashboard; Proactive data indexed market research; Chat, with proposals capability; Tradewinds webpage refresh to integrate visual and audio media content; Integration of RAI toolkit to Tradewinds; Incorporate training and education content; Platform workflow.
- Solutions Marketplace -- TSM updates with CDAO customer teams (CTO, ADVANA, Algorithmic Warfare, Responsible AI); Explainer video publication to increase ease of use and awareness for both industry and government; Example award workflows and video tutorials for prospective Government users.
- Culture Design and Implementation -- Culture Science Assessment Results; Culture Design Playbook.
- AI Fundamentals/Literacy -- FY 2023 Cohort #6 – XVIII Airborne Corps 5-7 Dec; FY 2024 Cohort #1 – Navy Acquisition 13-14 Dec; FY 2023 Cohort #2 – Air Force 2-8 Feb; FY 2024 Cohort #3 – SOCOM 5-7 Mar.
The DDS continues to serve as DoD's premier digital service team providing quick, current year digital solutions to the warfighter. DDS continues to specialize in rapid response, prototyping, cybersecurity, and technical assessments. Examples of FY 2024 projects include, delivering digital scaffolding to the U.S. Army to transform the Forward Area Air Defense (FAAD) into a modern data system; improving the candidate experience for individuals applying to DoD positions serviced by the Washington Headquarters Service (WHS); building a solution that will improve fuel efficiencies for Tankers in IndoPacom; leading the first-ever classified bug bounty; and implementing DoD's first ever continuous bug bounty.
In other foundational enablers area, the CDAO continues in implementation of C3.ai, AWS Diode, Tableau, Athena, Virtualitics, AWS SageMaker, Google Apigee, ESRI, RStudio via Databricks, Graphframes via Databricks, Data Catalog on SIPR, EDL on SIPR, Upgrade to Next Gen ML Search, grow to 100K+ users, and support 9 community spaces and their requirements. The CDAO also deploys its immuta data access policy engine as well as Common Data Model Ontology capabilities. On SUNet, the CDAO refreshed its enterprise H/W and S/W and hardening the network and performing the cyber monitoring and providing the defensive postures against any emerging threats. The CDAO continues to provide and deliver any necessary components and support associated with deployment and effective and efficient maintenance of the data, analytics tools and training plans.

A. Mission Description and Budget Item Justification

The mission of the Foundational Enablers project is to deliver enabling projects and capabilities to support CDAO's mission and functions. Enablers provide the foundation for the CDAO Big 5 Plays and include:
- Acquisition Ecosystem
- Advana Platform
- SUNet
- CDAO Centrally Managed Support
- Defense Digital Services

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 083 / *Foundational Enablers*

- Enterprise Platforms and Capabilities (EPC): Data Engineering, Data Operations, and Data Governance

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Foundational Enablers Efforts	-	-	197.511
Description: CDAO's Foundational Enablers efforts in this PE include: * Acquisition Ecosystem: provides rapid, effective, and efficient acquisition support to CDAO and DoD at large (through decentralized offerings) by providing contracting capabilities, guidance, and a highly trained acquisition workforce. The CDAO Acquisition Ecosystem provides several types of contracting mechanisms / vehicles such as CSOs, OTAs, BOAs, and BPAs; expedited contracting processes; and AI-driven tools to streamline federal procurements. * Advana Platform: the Advana Platform effort is responsible for providing the Secretary of Defense (SD), Deputy Secretary of Defense (DSD), Joint Staff, Principal Staff Assistants (PSAs), and each Military Service with enterprise data acquisition, data operations, and data analytics capabilities within a Government and Military-owned environment hosted in DoD and NGA clouds as well as available at the edge. The Advana Platform delivers 24/7 continuous operations on NIPR, SIPR, JWICS, SUNet, and Edge environments and supports a rapidly growing user community that now exceeds 75,000+ users, 450+ data connections, hosts the DoD Federated Data Catalog, hosts the DSD Pulse applications, and provides the core infrastructure for the CDAO Data Integration Layer. The "Creating Data Advantage" Memo, signed by DSD on 5 May 2021, directs that "The Advancing Analytics (Advana) platform is the single enterprise authoritative data management and analytics platform for the Secretary of Defense, Deputy Secretary of Defense, and Principal Staff Assistants (PSAs), with inputs from all DoD Components". * Secure Unclassified Network (SUNet) Enterprise: SUNet is a National Security System used as an AI development environment and Multi-national collaboration & data sharing environment for non-traditional partners (Sky Blue). Its unique capabilities include: - Unique and Extensible US Government Platform: - Designed as an Open Architecture, Non-Proprietary USG capability - Internet accessible, GIG-Waiver precludes special hardware/software required to access, alternative MFA - Supports commercial, non-traditional development, and non-CAC multi-national partners. Government (IL-5) and Industry Data Protection. Hybrid, On-Prem, Multi-cloud Enterprise - AI Development & Non-Traditional Partner Data Sharing used to deploy 250+ AI models, label 208+ million objects, and build over 1,000+ models from 30+ vendors - Partner collaboration platform for 25+ international partners, multiple mission profiles * CDAO Centrally Managed Support: Centrally managed support provides basic and advanced workforce enabling tools to empower the CDAO to advance mission for DoD. * Defense Digital Services (DDS): The Defense Digital Services (DDS) effort provides DoD with highly-technical expertise to advise on and rapidly develop, prototype, and deploy digital solutions to meet the needs of the warfighter and the policymaker. Digital solutions provided by this effort include prototypes, technology assessments of government digital services, cybersecurity solutions via bug bounties, and surging digital services for crises response.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 083 / *Foundational Enablers*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
* Enterprise Platforms and Capabilities (EPC) Data Engineering, Data Operations, and Data Governance: CDAO's Enterprise Platforms and Capabilities (EPC) Data Engineering, Data Operations, and Data Governance effort implements enterprise data acquisition, data engineering, data governance, data cataloging, and data integration capabilities available to 75,000+ Advana users and is required to support several top-priority CDAO use cases across the Department. These top-priority use cases include DSD Pulse metrics, the DoD Audit, the Federated Data Catalog, GIDE, J4 Operational Logistics, J35S Orion, J8 GFMDI, J7 JEXNET, all BASI products, and 300+ production applications hosted in the Advana platform. This effort also develops and sustains the expanding the number of enterprise data connections feeding data from Authoritative Data Sources (ADS) into the Federated Data Catalog hosted in Advana. This effort manages and currently sustains 450+ active data connections feeding data into the Federated Data Catalog. ***FY 2025 Plans:*** In FY 2025 CDAO's Foundational Enablers efforts in this PE will continue its FY 2024 activities and expand its work: * Acquisition Ecosystem: - TradewindAI.com: CDAO Acquisition's webpage of news & offerings - Tradewind Portal: OT Challenge postings, Requests for Information, Communities of interest (inc. TryAI CSO, AI Talent 2.0 BOAs, and other vehicles) - Solutions Marketplace: A centralized, video repository of readily awardable AI/ML, digital and data analytics solutions - Contract Writing System/AcqBot: Prototype project which applies AI, natural language processing (NLP), and robotic process automation (RPA) in a practical manner and intuitive workflow to assist with requirements generation - Public Private Partnership (PPP): Pilot to establish a new paradigm for a 'Global – Open & Trusted Ecosystem of Partners' where IP and work products can be shared as well as protected - On Demand AI Fundamentals: Pilot Training program to teach acquisition officials how to identify AI opportunities, set strong foundations for implementation, and overcome bureaucratic and procurement barriers * Advana Platform: continuous delivery, sustainment, and expansion of operational enterprise capabilities available in Advana NIPR, SIPR, JWICS, and Edge environments, including: - Institutionalize data, analytics, and AI-driven decision advantage | Drive timely, data-driven decisions and actions that support mission success by embedding accessible and approachable products and capabilities into the daily operations of our customers - Deliver a positive and reliable customer experience for all users | Provide an intuitive, interactive, and pleasant customer experience across applications and tools that make it easy to get work done, request assistance, and provide feedback - Provide secure, scalable, and cost-effective enterprise solutions | Deliver scalable, secure, and audit-compliant architecture and enterprise capabilities. Maximize our return on investment by operating as a secure, cost-effective shared service provider on multiple security domains with ATO (NIPR, SIPR, JWICS, SUNet, and Edge)			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 083 / *Foundational Enablers*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Accelerate DoD's data, analytics, and AI capabilities with world-class enterprise offerings | Deliver world-class capabilities that lead DoD to adopt leading transformative data solutions (e.g., predictive / prescriptive methods, emerging capabilities) to drive data driven decision advantage at scale and enable mission and warfighter success * CDAO Centrally Managed Support: - Emerging Foundational Enablers: Resources that contribute to the operational effectiveness of CDAO, SD and DSD priorities - Cyber Security Support Activities * DDS: - Prototyping digital solutions - Technology Assessments of in-development digital solutions - Cybersecurity: - Hack the Pentagon - Rapid Response Bug Bounties - Classified Bug Bounties - Crises Response * EPC Data Engineering, Data Operations, and Data Governance: continuous delivery, sustainment, and expansion of existing data connections, automated data operations, cross domain service integrations, and data cataloging enterprise services available in Advana NIPR, SIPR, JWICS, and Edge environments, including: - Delivering a scalable, automated, event-driven enterprise service designed to automatically move data between the Advana landing zone throughout the medallion architecture, through automated cross-domain solutions, and to external partner platforms using external data sharing capabilities available in Advana - Managing the automated data operations layer and data governance capabilities available in the Advana NIPR, SIPR and JWICS environment. This architecture currently supports 450+ operational data connections, 75,000+ Advana users, and 2,000+ Federated Data catalog users - Delivering and continuously expanding the DoD Federated Data Catalog hosted in the Advana environment. This Data Catalog provides all users, data stewards, and senior leadership with an automated enterprise capability to enable large-scale data discovery, cataloging of AI/ML models, and provides detailed metadata for each catalog asset * SUNet Enterprise: - Integration with the Advana ecosystem of enterprise platforms and capabilities operating on NIPR, SIPR, JWICS, and Edge. - Pipelines: CDAO will provide scalable, reliable, standardized pipelines for DoD to provide baseline requirements for AI development to include Data, AI, and Tool pipelines - Partners: CDAO has scoped an 'AI Journey' that will allow DoD to develop AI solutions any range of users, uncleared to cleared, hands-on to hand-held, boardroom to battlefield to develop AI capabilities across the enterprise. SUNet will enable non-traditional vendors and academia to participate in and drive AI in DoD			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 083 / *Foundational Enablers*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Cross platform connection: SUNet is a key piece in the Federated AI Enterprise and the base of CDAO's AI Scaffolding. Secure connections to other platforms (Advana, SIPR) to push data, models, and accredited tools are nascent. This effort will scale, standardize, and automate the process to improve the AI landscape, allowing best practices to be shared across platforms. - Platform Enhancements: State of the art tools, software, and licenses will be made available to users in order to attract them to the CDAO's Federated AI Enterprise and AI Scaffolding. Enhancements to make the platform cheaper, efficient, robust, and scalable - Hardware Refresh: Large portions of the hardware nearing end of life. Investments in new, cutting-edge processors, firewalls, switches, etc. will enhance the platforms security and performance. - Security Enhancements: Critical security teams have been short staffed or over-burdened with additional tasks. In addition to upgrading tools, licenses, and hardware, security teams will be supplemented ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Starting in FY 2025, funding was realigned from P067 AI/ML Demonstration & Validation. The most notable increase will be for the SUNet, which will be integrated into the Advana ecosystem and will be provide the baseline platform to providing data and connection between DoD and its outside stakeholders.			
Accomplishments/Planned Programs Subtotals	-	-	197.511

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	Project (Number/Name) 083 / *Foundational Enablers*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Foundational Enablers	C/Various	Foundational Enablers for CDAO : Various	-	-		-		197.511		-		197.511	Continuing	Continuing	-
		Subtotal	-	-		-		197.511		-		197.511	Continuing	Continuing	N/A

Remarks

These activities include not limited to Acquisition Ecosystem, Defense Digital Services, business analytics, Campaign Decision Support, Advana platform, SUNet enterprise, and data engineering, data operations, and data governance.
Beginning in FY 2025 Program Element funding was realigned and the schedule reflects the activity under the realigned PE even though these activities were conducted previously (therefore these activities are not new starts).

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		197.511		-		197.511	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 083 / *Foundational Enablers*

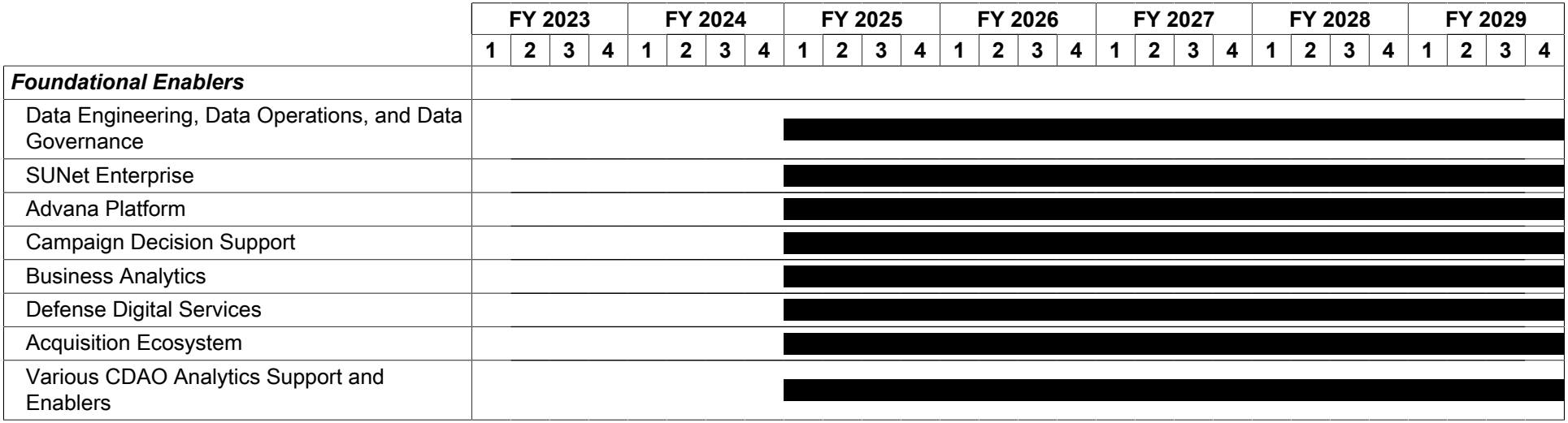


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 083 / *Foundational Enablers*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Foundational Enablers				
Data Engineering, Data Operations, and Data Governance	1	2025	4	2029
SUNet Enterprise	1	2025	4	2029
Advana Platform	1	2025	4	2029
Campaign Decision Support	1	2025	4	2029
Business Analytics	1	2025	4	2029
Defense Digital Services	1	2025	4	2029
Acquisition Ecosystem	1	2025	4	2029
Various CDAO Analytics Support and Enablers	1	2025	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	Project (Number/Name) 084 / *Improved Data Quality*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
084: *Improved Data Quality*	0.000	0.000	0.000	11.382	-	11.382	11.986	11.502	11.728	12.359	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

Beginning in FY 2025 funding was realigned under four new project codes to correctly align PE funding in support of Chief Digital and Artificial Intelligence Officer (CDAO) priorities.
In FY 2024, The CDAO supported to Office of the Under Secretary of Defense for Personnel & Readiness Office of Force Resiliency Violence Prevention Cell with its On-site Installation Evaluation dashboards that provide visibility into command climate for targeted action and identification of best practices for the Deputy's Workforce Council's quarterly climate updates. Dashboards also inform selection for onsite visits, which are used to compile the Annual On-Site Installation Evaluation Report and drives implementation of the prevention workforce. PSA Analytic product teams provided improved data quality and inputs to Performance analytics across DoD PSAs. Deployed RDIM RAVEN Core. Completed MVP to JS J4 LOG SIP/COP. In addition, the CDAO gather data sources and develop analytic models that support the Campaign Assessment Feedback Loop (CAFL), develops Campaign Encyclopedia application that provide visualizations of key campaign indicators and trends, and leverages Fly-Away teams to deliver digital tools and capabilities that enable components to provide improved campaign decision support to senior leaders. The CDAO also provides direct support to the CCMDs, Joint Staff and relevant Joint Task force in response to emerging crisis around the globe, including but not limited to developing operational data pipelines rapidly to meet commanders' information requirements and ensure common operating pictures across commands share reusable components and data. The CDAO also led in efforts to make difficult to parse unstructured data availed and useful in context to DoD leaders and decision makers.

A. Mission Description and Budget Item Justification

The mission of the Improved Data Quality project is to set the conditions for quality data Defense-wide, beginning with data product management for logistics and personnel data, and creating quality data at scale through empowering data leaders, building alignment through re-use of data management best practices, and providing enterprise services that connect platforms and practitioners.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Improve Data Quality Efforts	-	-	11.382
Description: CDAO's Improve Data Quality efforts in this PE include: * Logistics-focused efforts to create a data and analytic environment that propels data-driven decision advantage for senior leaders through end-to-end logistics analysis that optimizes planning, increases resiliency and security, and mitigates disruptions and risk			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 084 / *Improved Data Quality*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
* EPC Data and AI Management efforts to implement enterprise data sharing and automated data quality assessment capabilities hosted in the Advana platform. - - These efforts deliver automated Data Quality (DQ) assessment capabilities applied to each data connection feeding data to the Federated Data Catalog. - These enterprise data management capabilities are designed to enable improved decision-making capabilities for the Department's leadership using Authoritative Data Sources (ADS) connected to Advana applications, dashboards, models, and automated metrics. - These efforts provide continuous design, development, and delivery of large-scale, enterprise data integration and automated data quality assessment services. These services are required to support senior leadership's efforts to make data-driven decisions while utilizing the Federated Data Catalog hosted in the Advana environment to discover, access and utilize enterprise data. ***FY 2025 Plans:*** In FY 2025, the CDAO will continue to address Joint Staff J4 operational logistics visibility strategic questions, use the Supply Chain Risk Evaluation Environment as a catalyst to construct supply chain risk & resiliency analytic portfolio and provide key marquee enterprise products (e.g., personnel, logistics, readiness, program evaluation) while enabling more self-service for enterprise customers through a comprehensive list of services and foundational high-quality products. Partner with DoD Components to establish the structure for the Department’s analytic enterprise to develop and sustain quality analytical products that are scalable, transparent, and authoritative. Provide development and analytic framework to enable analytics aligned to DoD’s functional areas and PSA responsibilities. Support the development of well-designed tools and products using AI/ML capabilities to raise data quality, advance analytic methods using modern tools, and solve customers' most urgent analytic challenges. Integrate enterprise analytics into executive decision support initiatives to provide quality, timely, and PSA-approved analytics. This includes analytics for Logistics, Financial Management, Readiness, Procurement, Acquisition, Health, Global Force Management, and People. Provide production tools to support campaign assessment and quantify strategic completion in support of the Secretary of defense. In addition, the CDAO will consolidate the search tools, increase the capability of generative Ai enable search and summarization, continue foundational data engineering on logistics data in support of future incidents, and participate in CCMD and service component command exercises to refine future information requirements. The CDAO will also create the automated data quality metrics in the Federated Data Catalog, including assessments of completeness, uniqueness, and timeliness, and tracking historical data quality through integration with the Federated Data Catalog hosted by Advana. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Starting in FY 2025, funding was realigned from P067 AI/ML Demonstration & Validation. The CDAO conducted large scale data quality improvement in the logistics and people space in partnership with USD(P&R) and USR(A&S) those effort transition to maintenance and management by data owners throughout FY 2024. In FY 2025, the CDAO			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 084 / *Improved Data Quality*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
will produce primarily new enterprise data products that tackle the departments toughest data problems as well as cross cutting problems where data is too cross functional and interconnected for a component below DoD level to manage.			
Accomplishments/Planned Programs Subtotals	-	-	11.382

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	Project (Number/Name) 084 / *Improved Data Quality*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Improved Data Quality	C/Various	Improved Data Quality : Various	-	-		-		11.382		-		11.382	Continuing	Continuing	-
		Subtotal	-	-		-		11.382		-		11.382	Continuing	Continuing	N/A

Remarks

The on-going effort to improve the data quality for the DoD. The activity includes, not limited to logistics data, data and AI management.
Beginning in FY 2025 Program Element funding was realigned and the schedule reflects the activity under the realigned PE even though these activities were conducted previously (therefore these activities are not new starts).

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		11.382		-		11.382	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 084 / *Improved Data Quality*

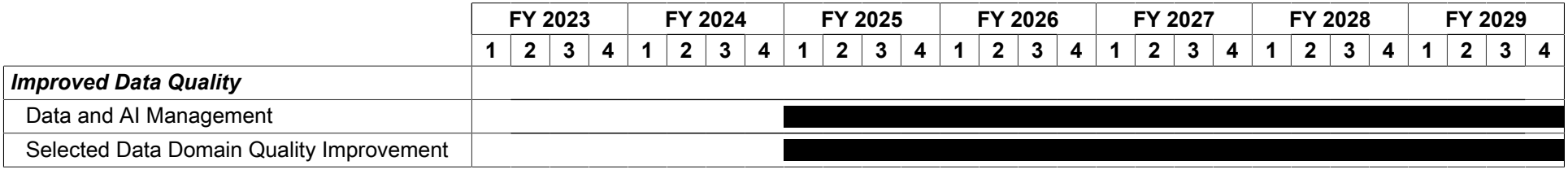


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604123D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) - Dem/Val Activities*	**Project (Number/Name)** 084 / *Improved Data Quality*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Improved Data Quality				
Data and AI Management	1	2025	4	2029
Selected Data Domain Quality Improvement	1	2025	4	2029

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604133D8Z *I Alpha-1 Development Activities*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	53.307	-	53.307	71.412	103.112	103.115	103.117	Continuing	Continuing
081: *Alpha-1 Development*	-	-	-	53.307	-	53.307	71.412	103.112	103.115	103.117	Continuing	Continuing

A. Mission Description and Budget Item Justification

The CDAO goal and strategy is to enable DOD Components to build AI/ML capabilities more easily, securely, reliably, and responsibly. ALPHA-I's mission is to eliminate the gap between AI's R&D, DEV-OPS, Acquisition, and data-pipeline deployment while providing all the ML-OPS tools for the DoD at Scale. Alpha-I should provide a service to the department that is responsible for strengthening and integrating data, analytics, artificial intelligence and machine learning (AI/ML), Development Operations, and digital solutions. This will be accomplished via collaboration and integration with existing and emerging DoD AI/ML programs and projects, and by selectively making investments to create portfolios of common, interoperable capabilities, tools, and services to enable the development and adoption of AI/ML across the DoD. Enterprise Services, Interoperability, and Collaboration will be key to develop, provide, broker, and advise on the design and development of infrastructure, apps, tools, and services needed by the variation of customers across the warfighting domains and platforms. Specifically focusing the tool sets to support the building of AI within narrow AI, generative AI and autonomy. As the market continues to mature rapidly in technology, intelligence, etc., the CDAO will continue to adapt and prioritize work based on the Department's need, delivering the mix of capabilities and best practices that will help all DOD components. Delivery of requirements, data labeling, data mesh, consulting, and continuing of Testing and Evaluation will be critical for DOD if they want to succeed in any type of conflicts moving forward.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	53.307	-	53.307
Current President's Budget	0.000	0.000	53.307	-	53.307
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 081: *Alpha-1 Development*		
Congressional Add: *None*	0.000	0.000
Congressional Add Subtotals for Project: 081	0.000	0.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604133D8Z / *Alpha-1 Development Activities*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add Totals for all Projects	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604133D8Z / *Alpha-1 Development Activities*	Project (Number/Name) 081 / *Alpha-1 Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
081: *Alpha-1 Development*	-	-	-	53.307	-	53.307	71.412	103.112	103.115	103.117	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

AI/ML development in the DoD has a high barrier to entry in terms of cost, certification to operate, workforce expertise, contracting, etc. DoD entities often independently solve the same problems and develop solutions that are not interoperable with other efforts. Alpha-1 aims to provide enterprise services for DoD AI/ML development to give a baseline to DoD AI/ML projects. Services provided by Alpha-1 will be employed at the discretion of the partnering projects. CDAO will fund and provide some amount of capabilities, partnering projects which can elect to augment with additional funds or capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Alpha-1 Development	0.000	0.000	53.307

Description: The CDAO goal and strategy is to enable DOD Components to build AI/ML capabilities more easily, securely, reliably, and responsibly. ALPHA-I's mission is to eliminate the gap between AI's R&D, DEV-OPS, Acquisition, and data-pipeline deployment while providing all the ML-OPS tools for the DoD at Scale. Alpha-I should provide a service to the department that is responsible for strengthening and integrating data, analytics, artificial intelligence and machine learning (AI/ML), Development Operations, and digital solutions. This will be accomplished via collaboration and integration with existing and emerging DoD AI/ML programs and projects, and by selectively making investments to create portfolios of common, interoperable capabilities, tools, and services to enable the development and adoption of AI/ML across the DoD. Enterprise Services, Interoperability, and Collaboration will be key to develop, provide, broker, and advise on the design and development of infrastructure, apps, tools, and services needed by the variation of customers across the warfighting domains and platforms. Specifically focusing the tool sets to support the building of AI within narrow AI, generative AI and autonomy. As the market continues to mature rapidly in technology, intelligence, etc., the CDAO will continue to adapt and prioritize work based on the Department's need, delivering the mix of capabilities and best practices that will help all DOD components. Delivery of requirements, data labeling, data mesh, consulting, and continuing of Testing and Evaluation will be critical for DOD if they want to succeed in any type of conflicts moving forward.

FY 2024 Plans:

The CDAO goal and strategy is to enable DOD Components to build AI/ML capabilities more easily, securely, reliably, and responsibly. ALPHA-I's mission is to eliminate the gap between AI's R&D, DEV-OPS, Acquisition, and data-pipeline deployment while providing all the ML-OPS tools for the DoD at Scale. Alpha-I should provide a service to the department that is responsible for strengthening and integrating data, analytics, artificial intelligence and machine learning (AI/ML), Development Operations, and digital solutions. This will be accomplished via collaboration and integration with existing and emerging DoD AI/ML programs and

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604133D8Z / *Alpha-1 Development Activities*	**Project (Number/Name)** 081 / *Alpha-1 Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
projects, and by selectively making investments to create portfolios of common, interoperable capabilities, tools, and services to enable the development and adoption of AI/ML across the DoD. Enterprise Services, Interoperability, and Collaboration will be key to develop, provide, broker, and advise on the design and development of infrastructure, apps, tools, and services needed by the variation of customers across the warfighting domains and platforms. Specifically focusing the tool sets to support the building of AI within narrow AI, generative AI and autonomy. As the market continues to mature rapidly in technology, intelligence, etc., the CDAO will continue to adapt and prioritize work based on the Department's need, delivering the mix of capabilities and best practices that will help all DOD components. Delivery of requirements, data labeling, data mesh, consulting, and continuing of Testing and Evaluation will be critical for DOD if they want to succeed in any type of conflicts moving forward.			
FY 2025 Plans: Alpha-1 PE was approved to enable DOD Components to build AI/ML capabilities more easily, securely, reliably, and responsibly. ALPHA-I's mission is to eliminate the gap between AI's R&D, DEV-OPS, Acquisition, and data-pipeline deployment while providing all the ML-OPS tools for the DoD at Scale. Alpha-I should provide a service to the department that is responsible for strengthening and integrating data, analytics, artificial intelligence and machine learning (AI/ML), Development Operations, and digital solutions. This will be accomplished via collaboration and integration with existing and emerging DoD AI/ML programs and projects, and by selectively making investments to create portfolios of common, interoperable capabilities, tools, and services to enable the development and adoption of AI/ML across the DoD. Enterprise Services, Interoperability, and Collaboration will be key to develop, provide, broker, and advise on the design and development of infrastructure, apps, tools, and services needed by the variation of customers across the warfighting domains and platforms. Specifically focusing the tool sets to support the building of AI within narrow AI, generative AI and autonomy. As the market continues to mature rapidly in technology, intelligence, etc., the CDAO will continue to adapt and prioritize work based on the Department's need, delivering the mix of capabilities and best practices that will help all DOD components. Delivery of requirements, data labeling, data mesh, consulting, and continuing of Testing and Evaluation will be critical for DOD if they want to succeed in any type of conflicts moving forward.			
FY 2024 to FY 2025 Increase/Decrease Statement: Alpha-1 PE was approved to enable DOD Components to build AI/ML capabilities more easily, securely, reliably, and responsibly. ALPHA-I's mission is to eliminate the gap between AI's R&D, DEV-OPS, Acquisition, and data-pipeline deployment while providing all the ML-OPS tools for the DoD at Scale. Alpha-I should provide a service to the department that is responsible for strengthening and integrating data, analytics, artificial intelligence and machine learning (AI/ML), Development Operations, and digital solutions. This will be accomplished via collaboration and integration with existing and emerging DoD AI/ML programs and projects, and by selectively making investments to create portfolios of common, interoperable capabilities, tools, and services to enable the development and adoption of AI/ML across the DoD. Enterprise Services, Interoperability, and Collaboration will be key to develop, provide, broker, and advise on the design and development of infrastructure, apps, tools, and services needed by the variation of customers across the warfighting domains and platforms. Specifically focusing the tool sets to support the building of AI within narrow AI, generative AI and autonomy. As the market continues to mature rapidly in technology, intelligence, etc.,			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604133D8Z / *Alpha-1 Development Activities*	**Project (Number/Name)** 081 / *Alpha-1 Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
the CDAO will continue to adapt and prioritize work based on the Department's need, delivering the mix of capabilities and best practices that will help all DOD components. Delivery of requirements, data labeling, data mesh, consulting, and continuing of Testing and Evaluation will be critical for DOD if they want to succeed in any type of conflicts moving forward.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	53.307

	FY 2023	FY 2024
Congressional Add: None	0.000	0.000
FY 2023 Accomplishments: none		
FY 2024 Plans: none		
Congressional Adds Subtotals	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604133D8Z / *Alpha-1 Development Activities*	**Project (Number/Name)** 081 / *Alpha-1 Development*

Remarks

The CDAO goal and strategy is to enable DOD Components to build AI/ML capabilities more easily, securely, reliably, and responsibly. ALPHA-I's mission is to eliminate the gap between AI's R&D, DEV-OPS, Acquisition, and data-pipeline deployment while providing all the ML-OPS tools for the DoD at Scale. Alpha-I should provide a service to the department that is responsible for strengthening and integrating data, analytics, artificial intelligence and machine learning (AI/ML), Development Operations, and digital solutions. This will be accomplished via collaboration and integration with existing and emerging DoD AI/ML programs and projects, and by selectively making investments to create portfolios of common, interoperable capabilities, tools, and services to enable the development and adoption of AI/ML across the DoD. Enterprise Services, Interoperability, and Collaboration will be key to develop, provide, broker, and advise on the design and development of infrastructure, apps, tools, and services needed by the variation of customers across the warfighting domains and platforms. Specifically focusing the tool sets to support the building of AI within narrow AI, generative AI and autonomy. As the market continues to mature rapidly in technology, intelligence, etc., the CDAO will continue to adapt and prioritize work based on the Department's need, delivering the mix of capabilities and best practices that will help all DOD components. Delivery of requirements, data labeling, data mesh, consulting, and continuing of Testing and Evaluation will be critical for DOD if they want to succeed in any type of conflicts moving forward.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604133D8Z / *Alpha-1 Development Activities*	**Project (Number/Name)** 081 / *Alpha-1 Development*

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Alpha-1 Development																												
Alpha-1 Development Activities																												

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Alpha-1 Development																												
Alpha-1 Development Activities																												

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604133D8Z / *Alpha-1 Development Activities*	**Project (Number/Name)** 081 / *Alpha-1 Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Alpha-1 Development				
Alpha-1 Development Activities	4	2016	3	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604161D8Z *I Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	102.020	6.328	6.229	13.549	-	13.549	12.933	15.353	15.603	15.897	Continuing	Continuing
163: *Nuclear and Conventional Physical Security*	85.970	6.328	6.229	5.616	-	5.616	4.865	5.778	5.871	5.982	Continuing	Continuing
042: *National Technical Nuclear Forensics*	16.050	0.000	0.000	7.933	-	7.933	8.068	9.575	9.732	9.915	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This Program Element supports the 2022 National Defense Strategy's four top-level defense priorities by: Defending the homeland, paced to the growing multi-domain threat posed by the People's Republic of China (PRC); Deterring strategic attacks against the United States, Allies, and partners; Deterring aggression, while being prepared to prevail in conflict when necessary – prioritizing the PRC challenge in the Indo-Pacific region, then the Russia challenge in Europe, and; Building a resilient Joint Force and defense ecosystem.

Nuclear and Conventional Physical Security/Nuclear Forensics, Resilience, and Survivability addresses the need to defend and deter against weapons of mass destruction threats and to safeguard personnel, prevent unauthorized access to equipment, installations, material, and documents, and to safeguard the foregoing against espionage, sabotage, damage, and theft. This program oversees advanced engineering development and rapid fielding throughout the DoD for an integrated and systemic approach to develop material solutions. Public Law, Presidential, and DoD guidance, and Combatant Command and Service requirements drive the priorities for these programs.

The Physical Security Enterprise and Analysis Group (PSEAG) is responsible for avoiding duplication of effort, ensuring systems integration, and promoting interoperability and sustainability. The material solutions either (a) lead to a Program of Record, (b) become technology insertions into existing programs; or (c) advance to being a certified Commercial/Government off-the-shelf product.

Per National Security Presidential Memorandum 35, the DoD leads the U.S. Government (USG) post-detonation National Technical Nuclear Forensics (NTNF) capability. Per DoD Directive S-2060.04, the Office of the Undersecretary of Defense for Acquisition & Sustainment (OUSD(A&S)) is the office responsible for developing and leading the DoD's NTNF capabilities. The DoD mission to collect and analyze post-detonation nuclear debris is critical to ensuring the USG can identify the source of nuclear material and holding those responsible for an attack is critical to our national defense and security. Internal and independent assessments indicate that new capabilities are needed to sustain an effective deterrent against an unattributed nuclear attack and meet the challenges of future threats. This PE is the only DoD RDT&E program focused on System Development and Demonstration for post-detonation NTNF capabilities.

This PE can fund travel to support the requirements of this program.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604161D8Z *I Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*

This appropriation will finance work, including staffing, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct research, development, and test and evaluation efforts.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	6.482	6.229	14.288	-	14.288
Current President's Budget	6.328	6.229	13.549	-	13.549
Total Adjustments	-0.154	0.000	-0.739	-	-0.739
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.154	-			
• Defense-Wide Topline Adjustment	-	-	-0.739	-	-0.739

Change Summary Explanation

FY 2024 to FY 2025 increase is associated with internal reprogramming from Advanced Component Development & Prototypes (0603161D8Z) to System Development and Demonstration (0604161D8Z) in support of Project 042: National Technical Nuclear Forensics / System Development & Demonstration (SDD).

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	Project (Number/Name) 163 / *Nuclear and Conventional Physical Security*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
163: *Nuclear and Conventional Physical Security*	85.970	6.328	6.229	5.616	-	5.616	4.865	5.778	5.871	5.982	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Physical Security Enterprise and Analysis Group (PSEAG) pursues the development of nuclear and conventional physical security materiel solutions in response to the stated needs and requirements of the Combatant Commands and Military Services. This program leverages commonalities in physical security requirements in order to closely balance and integrate the needs of users. The PSEAG is responsible for avoiding duplication of effort, ensuring systems integration, and promoting interoperability and sustainability. The materiel solutions either (a) lead to a Program of Record, (b) become technology insertions into existing programs; or (c) advance to being a certified Commercial/Government off-the-shelf product.

This PE can fund travel to support the requirements of this program.

This appropriation will finance work, including staffing, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct RDT&E efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Physical Security System Development & Demonstration	6.328	6.229	5.616
Description: Develop physical security components and systems to support valid requirements while eliminating duplication of effort, pursuing the use of government and commercial off-the-shelf products, ensuring systems integration, and promoting interoperability and sustainability.			
FY 2024 Plans: - Detect an adversary and assess their intentions by identifying and warning of unauthorized access to a specified area or installation, as well as equipment related to the notification and identification of explosive threats or hazards. - Control access to safeguard personnel and their families and to prevent unauthorized access to critical infrastructure and materials to validate and verify individuals entering or already within, a facility. - Invest in robust installation and transport security to prevent a weapon of mass destruction attack or the unauthorized access to key assets such as nuclear weapons and special nuclear material. - Improve the physical security profile of fixed sites and facilities, as well as critical items while in-transit.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Deter an adversary from accessing weapons of mass destruction or gaining unauthorized access to critical assets are at the heart of prevention. - Implement control measures that ensure access is limited to authorized persons is the foundation of physical security to delay or stop unauthorized entry/access to a specified/localized area. - Incorporate decision support systems to help management, operations, and planners make decisions, which may be rapidly changing and not easily specified in advance with a focus on command and control equipment, creation and enhancement of common operating pictures, and the establishment of common architectures / interface standards. ***FY 2025 Plans:*** - Detect, track, identify, and defeat uncrewed underwater vehicles where attribution and deterrence is considered. - Leverage Artificial Intelligence and Machine Learning to reduce nuisance and false alarm rates, detect insider threats, and/or improve detection and assessment of physical security threats. - Detect explosives at distances sufficient to protect people and resources at entry control points or other high value assets. - Develop insider threat detection systems to address the increased risk from internal adversaries. - Invest in exterior facing detection and wide area surveillance systems to address threats beyond restricted area perimeters to have sufficient time for response. - Identify innovative delay/denial solutions beyond high cost infrastructure upgrades to invest in lethal and non-lethal technology. - Improve network intrusion detection on physical security system networks to detect and prevent unauthorized access to a physical security systems or networks. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 decrease reflects minor deviation in budget priorities.			
Accomplishments/Planned Programs Subtotals	6.328	6.229	5.616

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

NA

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Physical Security - Product Development	Various	Various : Various	62.246	-		-		5.616		-		5.616	Continuing	Continuing	-
Joint Expeditious Subsurface-threat Sonar Capability	MIPR	Various : Various	0.849	4.319		-		-		-		-	Continuing	Continuing	-
Sonar Navigated Autonomous Grabber	MIPR	Various : Various	0.831	1.000		-		-		-		-	Continuing	Continuing	-
Small Arms Point Defense	MIPR	Various : Various	0.750	-		-		-		-		-	Continuing	Continuing	-
Waterside Defensive System	MIPR	Various : Various	1.494	-		-		-		-		-	Continuing	Continuing	-
Defender - Mobile Situational Awareness Tool	C/Various	Various : Various	-	-		1.141		-		-		-	Continuing	Continuing	-
Artificial Intelligence in Support of Installation Operations and Force Protection	C/Various	Various : Various	-	-		1.205		-		-		-	Continuing	Continuing	-
Platform for Integrated C3 and Responsive Defense	C/Various	Various : Various	-	-		2.249		-		-		-	Continuing	Continuing	-
		Subtotal	66.170	5.319		4.595		5.616		-		5.616	Continuing	Continuing	N/A

Remarks

NA

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Physical Security - Test & Evaluation	Various	Multiple : Multiple	18.244	-		-		-		-		-	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	Project (Number/Name) 163 / *Nuclear and Conventional Physical Security*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Trace Comparative	MIPR	EOD Tech Division : Indian Head, MD	0.795	-		-		-		-		-	Continuing	Continuing	-
Standoff Suicide Bomber Detection Development	MIPR	EOD Tech Division : Indian Head, MD	0.761	-		-		-		-		-	Continuing	Continuing	-
Millimeter Wave Thermal Test & Evaluation	MIPR	EOD Tech Division : Indian Head, MD	-	1.009		1.307		-		-		-	Continuing	Continuing	-
Gas Chromatography Mass Spectrometry Systems Test & Evaluation	MIPR	EOD Tech Division : Indian Head, MD	-	-		0.327		-		-		-	Continuing	Continuing	-
		Subtotal	19.800	1.009		1.634		-		-		-	Continuing	Continuing	N/A

Remarks

NA

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	85.970	6.328		6.229		5.616		-		5.616	Continuing	Continuing	N/A

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

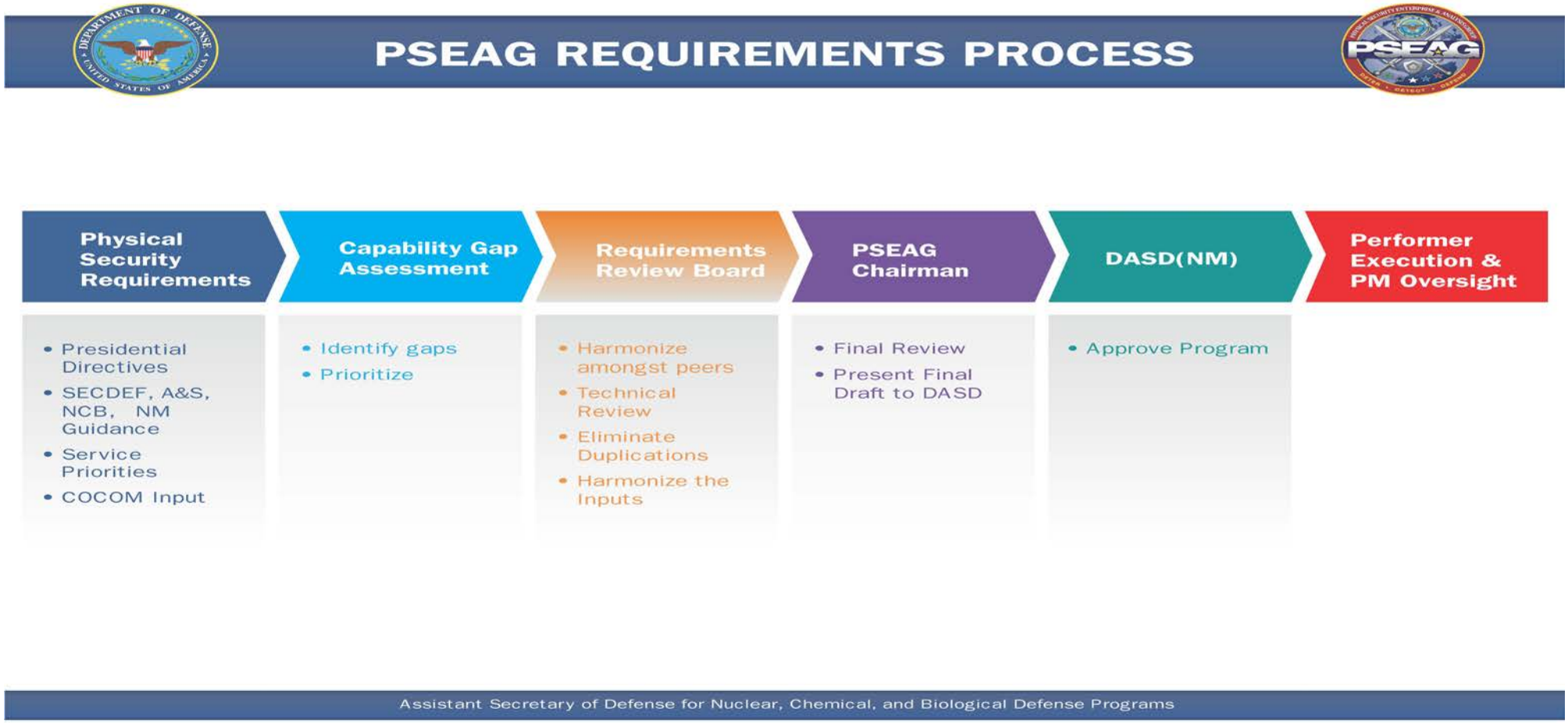


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Nuclear and Conventional Physical Security R&D				
Various physical security R&D efforts to address Combatant Command and Service Needs	1	2023	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	Project (Number/Name) 042 / *National Technical Nuclear Forensics*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
042: *National Technical Nuclear Forensics*	16.050	0.000	0.000	7.933	-	7.933	8.068	9.575	9.732	9.915	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

FY 2024 to FY 2025 increase is associated with internal reprogramming from Advanced Component Development & Prototypes (0603161D8Z) to System Development and Demonstration (0604161D8Z).

A. Mission Description and Budget Item Justification

Per NSPM 35, the DoD leads the USG post-detonation NTNF capability. Per DoDD S-2060.04, OUSD(A&S) is the DoD office responsible for DoD's NTNF capabilities. This program is the only DoD RDT&E program focused on System Development & Demonstration for NTNF capabilities.

Collecting and analyzing post-detonation debris is critical to ensure the USG can identify the source of nuclear material and hold those involved or supporting an attack accountable is critical to our national defense and security. Swift and accurate forensic and attribution (identification) capabilities are vital to supporting the President and Secretary of Defense in developing an appropriate, and timely, national response to a nuclear event and to prevent future attacks. An effective NTNF capability ensures potential adversaries, or those who support them, know that they will be held accountable if they use proxies or other non-traditional delivery (e.g., false-flag operations) of nuclear weapons against the U.S., U.S. interests, or allies. Both internal and independent studies indicate that continued improvement to the USG's NTNF capabilities is needed to sustain a credible deterrent against an attempted or actual nuclear attack.

Additionally, this program sustains perishable U.S. technical expertise at the operational DoD laboratories required to respond to a post-detonation NTNF event. The DoD's laboratory capability in this area is limited by capacity and technical expertise. Increased support of the DoD's NTNF mission is crucial to prevent attrition of current capabilities and knowledge base, ensure that this critical and unique deterrence capability is not lost, putting the security of the nation and the ability to deter specific kinds of nuclear attack at risk, and meeting a higher standard of timeliness and confidence as directed.

This PE can fund travel to support the requirements of this program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: NTNF Capability Development	-	-	7.933

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	**Project (Number/Name)** 042 / *National Technical Nuclear Forensics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The development of capability to collect, analyze, and evaluate nuclear debris is critical to our national defense and security. Swift and accurate forensic analysis and contribution to USG attribution (identification) processes are vital to supporting the President and Secretary of Defense in developing an appropriate national response to a nuclear event and to prevent future attacks in a timely manner. Recent Russian nuclear threats related to Ukraine have sharpened the understanding of, and need for, robust nuclear forensics capabilities NTNF investments support development and retention of technical nuclear forensics expertise, improve CONUS and OCONUS ground and airborne debris collection, improve the fixed laboratory process, improve legacy NTNF capabilities, and support operationalization of new capabilities. ***FY 2025 Plans:*** - Execute a National-Level technical demonstration, or series of technical demonstrations, with Interagency Partners to test the full nuclear forensics process from sample collection to final technical assessment. - Operationalize deployed nuclear detection prompt signals sensors (the United States Prompt Detection System), connecting the in-field sensors to active operational centers so that their data feed can be continuously monitored. - Develop Thresher Prototype for New Airborne Sensor Collector. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 increase is associated with internal reprogramming from Advanced Component Development & Prototypes (0603161D8Z) to System Development and Demonstration (0604161D8Z).			
Accomplishments/Planned Programs Subtotals	-	-	7.933

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	Project (Number/Name) 042 / *National Technical Nuclear Forensics*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NTNF	Various	Various : Various	-	-		-		7.933		-		7.933	Continuing	Continuing	-
CNT	Sub Allot	JPEO CBD : Aberdeen, MD	16.050	-		-		-		-		-	-	-	-
		Subtotal	16.050	-		-		7.933		-		7.933	Continuing	Continuing	N/A

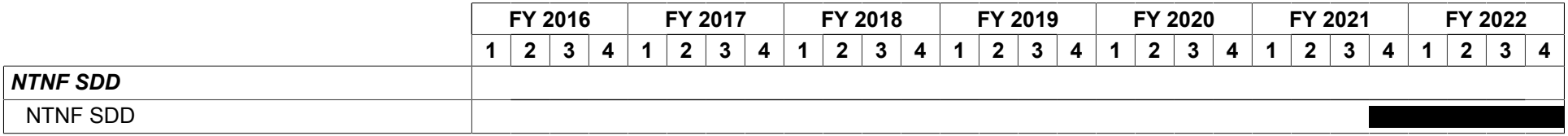
Remarks

NTNF SDD requirements begin in FY 2025

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.050	-		-		7.933		-		7.933	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	**Project (Number/Name)** 042 / *National Technical Nuclear Forensics*



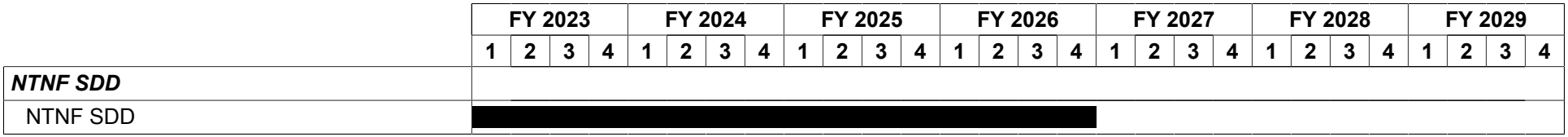


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability*	**Project (Number/Name)** 042 / *National Technical Nuclear Forensics*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NTNF SDD				
NTNF SDD	4	2021	4	2026

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	192.219	8.634	9.775	12.893	-	12.893	13.018	13.162	13.497	13.876	Continuing	Continuing
771: *Joint Information and Capability Modernization*	192.219	8.634	9.775	12.893	-	12.893	13.018	13.162	13.497	13.876	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland, Provide Nuclear Deterrence, and Build Sustainable and Long-Term Advantage.

This program provides in-depth technical, engineering, integration support, and system of system analysis for space, missile defense, Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR), Nuclear Command, Control, and Communications (NC3), and nuclear delivery system modernization program portfolio management.

- Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance: Develop and maintain a roadmap to improve data link interoperability, data link waveform standards, and global enterprise capabilities, enabling resilient, survivable, federated networks.
- NC3 and Strategic Deterrence: Execute NC3 Enterprise Capability Portfolio Management on behalf of the Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)). Provides acquisition expertise to recapitalize the nation's nuclear deterrent and reduce risk in nuclear modernization programs.
- Space and Missile Defense: Provides acquisition expertise to inform synchronized modernization and fielding of space and missile defense systems, including Space Control, Remote Sensing, Satellite Communication (SATCOM), Position, Navigation and Timing (PNT), launch, and homeland and regional missile defense capabilities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	8.634	9.775	9.926	-	9.926
Current President's Budget	8.634	9.775	12.893	-	12.893
Total Adjustments	0.000	0.000	2.967	-	2.967
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Increase for Integrated Acquisition Portfolio Reviews	-	-	2.967	-	2.967

Change Summary Explanation

Increase in FY 2025 provides funding to enable the USD(A&S) and OUSD (A) to meet the Deputy Secretary of Defense priorities in expanding and institutionalizing the Integrated Acquisition Portfolio Reviews (IAPR) and Competitive Acquisition Pathways.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*	Project (Number/Name) 771 / *Joint Information and Capability Modernization*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
771: *Joint Information and Capability Modernization*	192.219	8.634	9.775	12.893	-	12.893	13.018	13.162	13.497	13.876	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Provide in-depth technical, engineering, integration support, and system of system analysis for space, missile defense, cyber, C4ISR, NC3, and nuclear delivery system modernization program portfolio management.
- Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance: Develop and maintain a roadmap to improve data link interoperability, data link waveform standards, and global enterprise capabilities, enabling resilient, survivable federated networks.
-NC3 and Strategic Deterrence: Execute NC3 Enterprise Capability Portfolio Management on behalf of the USD(A&S). Provides acquisition expertise to recapitalize the nation's nuclear deterrent and reduce risk in nuclear and NC3 modernization programs.
- Space and Missile Defense: Provides acquisition expertise to inform synchronized modernization and fielding of space and missile defense systems, including Space Control, Remote Sensing, SATCOM, PNT, launch, and homeland and regional missile defense capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Joint Information and Capability Modernization	8.634	9.775	12.893
Description: FY 2023 Accomplishments: C4ISR: - Performed Bandwidth Efficient Common Data Link (CDL-BE) compliance analysis on over 120 platforms/users, evaluated new and evolving industry and government waveforms, and identified data transport plans for emerging capabilities. - Led the DSD Directed Competitive Advantage (CAP) Pathway for the Joint All Domain Command and Control (JADC2) concept; focused upon an INDOPACOM capability for information dominance and Joint C2 addressing key pillars of the Joint Warfighting Concept. - Completed five National Intelligence Acquisition Boards (one MS-A and four MS-B) authorizing the full-scale development of Intelligence Community Major Systems Acquisitions - Executed A&S leadership role within the Congressionally directed 5G Cross Functional Team, focused upon accelerating acquisition and sustainment of 5G capabilities and services. - Executed A&S co-chair function within the C3LB, conducted strategic planning, prioritization, policy execution, resource review, and oversight; addressed Link 16, Tactical Data Link Portfolio Management, Narrowband SATCOM Network Transition, Emergency Mass Warning and Notification, Next Generation 9-1-1, Mobile User Objective System Modernization, High Frequency Governance, SATURN Lead Service, SATCOM Gateway Policy, and Command and Control Machine-to Machine interfaces.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*	**Project (Number/Name)** 771 / *Joint Information and Capability Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Developed an integrated DoD acquisition strategy and development schedule for Service-led datalink and networks; coordinate DoD acquisition strategy report with services on Low Probability of Detection (LPD) and Low Probability of Intercept (LPI) waveforms & technologies. - Executed the initial JADC2 Integration Acquisition Portfolio Review (IAPR), evaluated current JADC2 acquisitions to identify acquisition challenges and proposed extensible reforms to the Defense Acquisition System, the Planning, Programming, Budgeting & Execution process, and the Joint Capabilities Integration & Development Systems. - Provided technical and acquisition support to the JADC2 CFT, provided coordination and AO support for reviews of JADC2 Reference Architecture, and developed JADC2 Implementation Plan products to support critical cross-functional team timelines and deliverables. - Implemented US/France datalink interoperability between 4th/5th gen platforms and supported United States/United Kingdom Federated Network C3 joint cooperation group. - Provided acquisition leadership and technical support to DoD CIO-led Electro-Magnetic Spectrum efforts including for the Emerging Mid-Band Radar Spectrum Study, the American Mid-Band Initiative Team, as well as strategy and roadmap development to support Congressional and DoD senior leader deliverables. - Developed the FY 2024 Joint Tactical Network Center Management Plan and Tri-Military Department Resource Plan which align the DoD's prioritized Joint communications needs and requirements between the Tactical Communications Senior Steering Group, the Communications Technology and Waveform Working Group, Service sponsors, and other key Stakeholders. - Executed the A&S leadership role for Innovation Steering Group, focusing on improving innovation transition effectiveness to acquisition. NC3 and Strategic Deterrence: - Supported the NC3 Capability Portfolio Manager with analysis presented to senior leadership bodies (NC3 Deputy's Management Action Group, Council on Oversight of the National Leadership Command, Control, and Communications System (CONLC3S), etc.) and recommended investment and policy alternatives. - Conducted NC3 Integrated Acquisition Portfolio Review which identified programmatic risks and opportunities within the NC3 Portfolio focused on the situation monitoring to decision making mission thread with emphasis on advanced missile threats. IAPR findings identified opportunities and challenges in integration of proliferated space-based sensors, assured data paths to key nodes and decision makers, the importance of agile and responsive conferencing, and the resiliency of the integrated sensor architecture in a nuclear scenario. - Led NC3 working group supporting the 2022 Nuclear Posture Review (NPR) Implementation Tasks. Collaborated with DoD and Agency staffs to ensure NC3 Next Generation will provide modernized NC3 capabilities to enable mission assurance for nuclear operations. Identified findings to producing a more resilient and capable modernized NC3 system.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*	**Project (Number/Name)** 771 / *Joint Information and Capability Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Supported the recapitalization of the nation's nuclear deterrent, drove risk reduction in nuclear delivery system modernization programs, enhanced sustainment of fielded nuclear capabilities, supported Department-wide efforts to complete the NPR and develop an initial NPR implementation plan. - Led numerous Department-wide engagements bringing together stakeholders on Sentinel (Ground Based Strategic Deterrent) program, fostered whole of government support for the program's initial outreach to facilitate future fielding efforts. - Conducted In-Progress Reviews (IPRs) for the ACAT ID Sentinel and Long Range Standoff Weapon (LRSO) reviewing cost, schedule, performance and risk of these critical strategic deterrence programs. These IPRs resulted in improved estimates of Sentinel schedule risks and software metrics, providing additional quantitative data to drive improved program performance. For LRSO, the IPRs ensured a continued successful transition into the Engineering and Manufacturing Development contract. - Provided acquisition expertise to the Nuclear Weapons Council (NWC), recommending additional oversight and risk mitigation on key nuclear programs to enable continued synchronization, leading to successful fielded of the capability. - Provided acquisition expertise across numerous NWC Working Groups in support of key statutory responsibilities of the council. - Led sub-working group within the Nuclear Posture Review activities to foster continued and renewed support for the nuclear modernization activities Space and Missile Defense (SMD): - As co-chair of the PNT oversight council, performed oversight and cross-Service coordination of PNT modernization acquisitions to improve DoD warfighting capability. - Conducted Space Control mission thread analysis to identify schedule risk and integration challenges relating to the mission essential function in executing OPLANs. - Performed portfolio management of SATCOM, Remote Sensing, Space Control, PNT, Assured Access to Space, and Missile Defense acquisitions. Identified multi-Service programmatic disconnects for development, fielding, and operations of space, ground, and user capabilities; engaged with joint community to develop resolution courses of action ***FY 2024 Plans:*** C4ISR: - Leverage artificial intelligence and machine learning to increase AISR data transport system capabilities and implement a network maintenance concept ensuring end-to-end operational availability. - Execute the A&S leadership role within the 5G CFT, focused upon developing accelerated 5G acquisition strategies and requirements that allow DoD to leverage and deploy 5G and next-G technologies at the speed of commercial industry. - Execute A&S co-chair function of the C3LB governance council, performing oversight and cross-Service coordination of public safety communications, tactical radio and networks, TDL, and common data link modernization acquisitions to improve DoD system interoperability.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*	**Project (Number/Name)** 771 / *Joint Information and Capability Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Track and assess acquisition implementation of Link 16 capability improvements across Services. Support JS J6 efforts to resolve cryptographic modernization issues. - Execute portfolio management of Joint C2 acquisitions. Identified multi-Service programmatic disconnects for air operations planning capabilities; engaged with joint community to develop resolution courses of action. - Provide acquisition leadership to advance JADC2 CFT sponsored efforts to include document development, reviews, and major studies for acquisition and material development efforts. - Continue collaboration with DoD and Intelligence Community acquisitions and oversight staff to refine agile development lessons learned, best practices, and best-of-breed tools and metrics into acquisition policy and guidance and implement across all DoD agile development programs - Continue support to OUSD(A&S) International Cooperation activities in line with the National defense strategy to strengthen alliances and attract new partners. Continue coordination for Yockey waivers, DoD Advocacy Requests, and Policy issues. Work with France to define an interoperability roadmap for 2030 and beyond. - Continue the TDL capability roadmap by synchronizing Department acquisition strategies to field next generation waveforms, gain efficiencies, and maintain Interoperability between the Services, allies, and partner nations. - Continue oversight of JTNC coordination activities and maintain the JTNC Management Plan as a living document reflecting priorities from the Tactical Communications Senior Steering Group, the Communications Technology and Waveform Working Group, Service sponsors, and other key Stakeholders. - Execute the A&S leadership role toward integrated EMS operations to ensure capabilities are met through integrated electronic transport that remain unimpeded in contested and congested EMS environments. - Execute the A&S leadership role within ISG providing acquisition insight into ISG efforts to adjudicate priorities and recommendations to inject innovation into activities and programs that meet NDS lines of effort and advise Department leadership on science, technology transition, and other related matters while also improving innovation transition effectiveness to Acquisition. NC3 and Strategic Deterrence: - Partner with USSTRATCOM NC3 Enterprise Center to evolve the NC3 Capability Planning Guidance for FY 2026-2030. Clarify direction to Services by organizing the guidance to deliver incremental modernization in well-defined transitions and clarifying longer term capability objectives to better target research and development investments. - Support the NC3 CPM with analysis presented to senior leadership bodies (NC3 Enterprise Review, Deputy's Management Action Group, etc.) and recommend investment and policy alternatives. - Complete NC3 Integrated Acquisition Portfolio Review (IAPR) on a selected mission thread to identify programmatic schedule risk and integration challenges associated with a subset of the portfolio. The FY 2024 IAPR will likely focus on recapitalization and integration of fixed, ground mobile, and airborne command and control platforms. - Support the recapitalizing the nation's nuclear deterrent, drive risk reduction in nuclear modernization programs, enhance sustainment of fielded nuclear capabilities, and continue implementing the Nuclear Posture Review.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*	**Project (Number/Name)** 771 / *Joint Information and Capability Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Conduct for In-Progress Reviews for the Long Range Standoff Weapon and Sentinel programs. Continue to assess cost, schedule and performance of the nuclear portfolio. Space and Missile Defense: - Provide in-depth technical, engineering, integration support, and system of system analysis for space systems and missile defense modernization program portfolio management. - As a Co-Chair for the Position, Navigation, and Timing (PNT) oversight council, conduct strategic planning, prioritization, policy execution, resource review, and oversight of DoD PNT initiatives. - As a Co-Chair for the Missile Defense Executive Board, conduct strategic planning, prioritization, policy execution, resource review, and oversight of DoD missile defense initiatives. - Engage in Force Protection and Battlespace Awareness Functional Capabilities Board (FCB) Working Groups, FCBs, and Joint Capabilities Boards to ensure Space and Missile Defense Directorate equities and interests are adequately addressed, with specific focus on the synergies/integration between the space and ground segments and associated command and control (C2); TT&C; SATCOM, and other key data links. ***FY 2025 Plans:*** C4ISR: - Execute A&S co-chair function of the C3LB governance council, performing oversight and cross-Service coordination of public safety communications, tactical radio and networks, TDL, and common data link modernization acquisitions to improve DoD system interoperability. - Perform acquisition oversight/management, programmatic (cost, schedule, & performance), and technical data assessment to ensure continued progress of Intelligence Community Major Systems Acquisitions and Special Interest Acquisition, including projected increases for space based ISR and targeting capabilities. - Execute further JADC2 Integration Acquisition Portfolio Reviews (IAPRs), evaluate current and emerging JADC2 acquisitions to identify acquisition challenges and proposed extensible reforms to the Defense Acquisition System, the Planning, Programming, Budgeting & Execution process, and the Joint Capabilities Integration & Development Systems. - Provide technical and acquisition support to the JADC2 CFT, provided coordination and AO support for reviews of JADC2 Reference Architecture, and developed JADC2 Implementation Plan products to support critical cross-functional team timelines and deliverables. - Provide technical assessments and enterprise-level analysis in support of USD(A&S)'s role as the Principal Staff Assistant on Common Data Links and Joint Cyber Command & Control Systems; develop CDL database; conduct assessment of BE-CDL compliance			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*	**Project (Number/Name)** 771 / *Joint Information and Capability Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue support to OUSD(A&S) International Cooperation activities in line with the National defense strategy to strengthen alliances and attract new partners. Continue coordination for Yockey waivers, DoD Advocacy Requests, and Policy issues. Work with France to define an interoperability roadmap for 2030 and beyond. - Continue the TDL capability roadmap by synchronizing Department acquisition strategies to field next generation waveforms, gain efficiencies, and maintain Interoperability between the Services, allies, and partner nations. - Oversee acquisition and sustainment activities designed to mature, increase the capacity, capability, and resiliency of DoD's intelligence, surveillance, and reconnaissance space, airborne, and terrestrial data processing, exploitation, transportation, and distribution networks - Provide acquisition leadership and technical support to DoD CIO-led Electro-Magnetic Spectrum efforts as well as strategy and roadmap development to support Congressional and DoD senior leader deliverables. - Continue oversight of JTNC coordination activities and maintain the JTNC Management Plan as a living document reflecting priorities from the Tactical Communications Senior Steering Group, the Communications Technology and Waveform Working Group, Service sponsors, and other key Stakeholders. NC3 and Strategic Deterrence: - Partner with USSTRATCOM NC3 Enterprise Center to evolve the NC3 Capability Planning Guidance for FY 2028-2032. Revise and implement solutions to ensure NC3 protection of critical NC3 information though revision of security assurance policy and developing a long-term plan for implementing security solutions to NC3 government and industrial base partner using emerging commercial standards. - Support the NC3 CPM with analysis presented to senior leadership bodies (NC3 Deputy's Management Action Group, Council on Oversight of the National Leadership Command, Control, and Communications System, etc.) and recommend investment and policy alternatives. - Complete NC3 Integrated Acquisition Portfolio Review (IAPR) to identify programmatic schedule risk and integration challenges focused on transitioning advanced networking capabilities into programs to better integrate command nodes and elements and improve dynamic resiliency against modern threats. Space and Missile Defense: - Provide in-depth technical, engineering, integration support, and system of system analysis for space systems and missile defense modernization program portfolio management. - As a Co-Chair for the Position, Navigation, and Timing (PNT) oversight council, conduct strategic planning, prioritization, policy execution, resource review, and oversight of DoD PNT initiatives.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*	**Project (Number/Name)** 771 / *Joint Information and Capability Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- As a Co-Chair for the Missile Defense Executive Board, conduct strategic planning, prioritization, policy execution, resource review, and oversight of DoD missile defense initiatives. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in FY 2025 provides funding to enable the USD(A&S) and OUSD (A) to meet the Deputy Secretary of Defense priorities in expanding and institutionalizing the Integrated Acquisition Portfolio Reviews (IAPR) and Competitive Acquisition Pathways.			
Accomplishments/Planned Programs Subtotals	8.634	9.775	12.893

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Utilize existing fixed-price and cost-plus contracts (where appropriate) to continue providing in-depth technical, engineering, integration support, and system of system analysis for space, NC3, strategic deterrence, missile defense, and C4ISR.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*	**Project (Number/Name)** 771 / *Joint Information and Capability Modernization*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Information and Capability Modernization	C/TBD	OUSD A&S DASD SSIPM : Pentagon	192.219	8.634	Jan 2023	9.775	Feb 2024	12.893	Feb 2025	-		12.893	Continuing	Continuing	Continuing
		Subtotal	192.219	8.634		9.775		12.893		-		12.893	Continuing	Continuing	N/A

Remarks

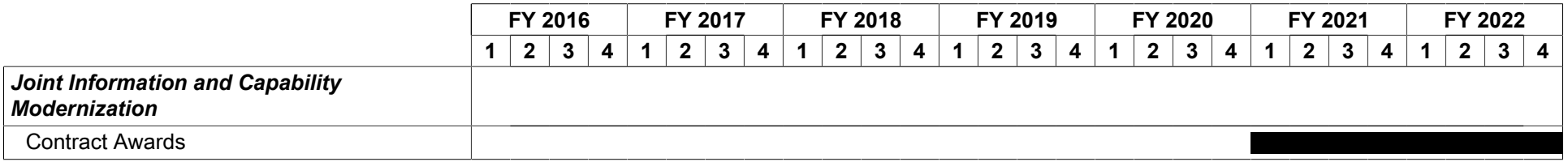
NA

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	192.219	8.634		9.775		12.893		-		12.893	Continuing	Continuing	N/A

Remarks

Resources will be used to provide technical, systems engineering and acquisition management oversight of programs, projects and activities to maximize the Department's return on investment in information technology resources and to affect a comprehensive approach for assessing and procuring critical information systems from initial design, through development to capability delivery in support of improved weapons systems performance and military operations.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*	**Project (Number/Name)** 771 / *Joint Information and Capability Modernization*



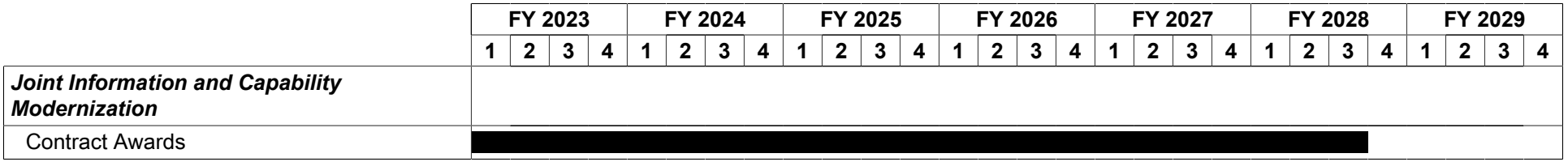


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604771D8Z / *Joint Tactical Information Distribution System (JTIDS)*	**Project (Number/Name)** 771 / *Joint Information and Capability Modernization*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Joint Information and Capability Modernization				
Contract Awards	1	2021	3	2028

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605022D8Z / *Defense Exportability Features (DEF) Program*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	97.603	30.142	18.981	15.779	-	15.779	14.745	14.420	14.654	14.930	-	-
013: *Defense Exportability Features (DEF) Program*	97.603	30.142	18.981	15.779	0.000	15.779	14.745	14.420	14.654	14.930	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The DEF Program funds activities to support identification of major defense acquisition programs for possible export and the planning for design and incorporation of exportability features during the research and development phases of these programs. Features include, but are not limited to, technology and engineering design activities such as capability differentials, anti-tamper, system assurance, and software assurance. Activities include the development of program protection strategies for the program; the design and incorporation of exportability features into the system; implementation of exportability requirements into contracts; and other research, development, test, and evaluation activities.

Defense exportability features play a critically important role in DoD efforts to build partnership capacity. Funds support building joint and coalition environments by enabling the export of DoD systems to a wide range of partner nations, resulting in improved security and interoperability. In addition to the operational benefits, by providing these resources up front, the United States and partner nations will save significant resources by more efficiently designing and producing exportable U.S. systems.

Experience has shown that failure to identify the full range of Critical Program Information (CPI) early in a DoD program's design phase can drive major affordability and schedule problems later when programs have to "retrofit" program protection measures prior to export. Early development of export variants, including systems design approaches to integrate exportable anti-tamper protection and differential capability requirements to lower production costs, makes it possible to improve quality and timely deliveries to allies and friends and may enhance U.S. industry share of the global marketplace.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605022D8Z / *Defense Exportability Features (DEF) Program*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	30.145	18.981	16.640	-	16.640
Current President's Budget	30.142	18.981	15.779	-	15.779
Total Adjustments	-0.003	0.000	-0.861	-	-0.861
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other program adjustments	-0.003	0.000	-0.861	-	-0.861

Change Summary Explanation

The FY 2025 decrease of $0.861 million is to support other DoD administration and departmental priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605022D8Z / *Defense Exportability Features (DEF) Program*	Project (Number/Name) 013 / *Defense Exportability Features (DEF) Program*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
013: *Defense Exportability Features (DEF) Program*	97.603	30.142	18.981	15.779	0.000	15.779	14.745	14.420	14.654	14.930	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The DEF Program funds activities to support identification of major defense acquisition programs for possible export and the planning for design and incorporation of exportability features during the research and development phases of these programs. Features include, but are not limited to, technology and engineering design activities such as capability differentials, anti-tamper, system assurance, and software assurance. Activities include the development of program protection strategies for the program; the design and incorporation of exportability features into the system; implementation of exportability requirements into contracts; and other research, development, test, and evaluation activities.

Defense exportability features play a critically important role in DoD efforts to build partnership capacity. Funds support building joint and coalition environments by enabling the export of DoD systems to a wide range of partner nations, resulting in improved security and interoperability. In addition to the operational benefits, by providing these resources up front, the United States and partner nations will save significant resources by more efficiently designing and producing exportable U.S. systems.

Experience has shown that failure to identify the full range of CPI early in a DoD program's design phase can drive major affordability and schedule problems later when programs have to "retrofit" program protection measures prior to export. Early development of export variants, including systems design approaches to integrate exportable anti-tamper protection and differential capability requirements to lower production costs, makes it possible to improve quality and timely deliveries to allies and friends and may enhance U.S. industry share of the global marketplace.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: DEF Program	30.142	18.981	15.779
Description: The DEF Program enables DoD programs to develop and incorporate technology protection features in designated systems during the research and development phase of such systems to prepare them for export. By facilitating the export of U.S. defense systems, the DoD enhances the U.S. defense industrial base, strengthens the military capabilities of U.S. allies around the world, and increases coalition interoperability. Program activities funded by FY 2023 & FY 2024 funds include: • MQ-9A Block 1: Provided funding to develop, integrate, and test 1 MQ-9A Block 1 and Block 25 DCMGCS to establish exportability of the configuration. Testing Includes Ground Flight, HIL, and SIL testing. This also includes developing exportable			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605022D8Z / *Defense Exportability Features (DEF) Program*	**Project (Number/Name)** 013 / *Defense Exportability Features (DEF) Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
MQ-9A Block 1 and Block 25 DCMGCS English language CSTOs and English language Aircrew and Maintenance Personnel Training Curriculum. • AN/MPQ-64A3 Sentinel F1 EP Software Enhancements: The planned scope of work includes EP Enhancements, integration and regression testing of EP Enhancements on the F1 SW Baseline and updating system and software requirements. • Astro-Standards (Space Force): Follow on work will continue the implementation of DEF Phase 1B-identified architecture and processes and building upon the foundation set by the first year's initial Phase 2 efforts, including continued prototyping of prioritized exportability features that could be tested and used for lessons learned about the development and delivery of future exportable-ready software capabilities. • Integrated Solutions for Situation Awareness (Space Force): Follow on work will continue implementation of DEF Phase 1B-identified architecture and processes. Building upon the foundation set by the current year's Phase 2 efforts, include continued prototyping of prioritized exportability features that could be tested and used for lessons learned about the development and delivery of future exportable-ready software capabilities. • Abrams Tank Systems Armor (Army): Follow on work will continue and the planned scope of work includes Integration of US Government selected armor design into the current M1A2 SEPv3 Abrams tank turret front armor cavities, provide a Preliminary Technical Data package, and conduct USG validation testing. • Indirect Fire Protection Capability (IFPC) Increment 2 (IFPC Inc 2) (Army): Follow on work will continue to develop an exportable version of the launcher and AUR-M. The DEF Phase 2A effort will transition the previous DEF studies' fundings and recommendations into the Request for Proposal (RFP) for the Low-Rate Initial Production (LRIP) contract. The Phase 2B effort will be the implementation of the hardware and software changes into the LRIP production assets. The objectives of these efforts are to have a fully exportable weapon system configuration available at Full Rate Production. ***FY 2024 Plans:*** • Plans Include: Follow-on Funding to the Army's Future Vertical Lift, Tactical Combat Training System II programs, and the Air Force's Tactical High Power Microwave Operational responder program. • Future Vertical Lift: FLRAA (Army): Future Long Range Assault Aircraft (FLRAA) is the Capability Set 3 of the Future Vertical Lift (FVL) Family of Systems (FoS). FLRAA will provide the Army and Joint Force with an advanced vertical lift aircraft with advanced technologies to support Multi-Domain Operations from 2030 and beyond. The work done in this follow-on study will expand previous work on: design, development, and implementation of technology protection features that enable export, and/or (2)			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605022D8Z / *Defense Exportability Features (DEF) Program*	**Project (Number/Name)** 013 / *Defense Exportability Features (DEF) Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
modify or remove technologies and/or capabilities prohibited for export early in the acquisition life cycle, when possible. The study will inform and leverage, when available, a program protection, security classification guide, and critical program information (CPI) analysis, amongst other information sources. • Tactical Combat Training System II (Navy): The follow-on study will focus on completing the P5CTS Interoperable WF Integration. The P5CTS Interoperable WF is a critical enabler for partner nations currently operating P5CTS systems. • Tactical High Power Microwave Operational Responder THOR/MJOLNIR (Air Force): The study team will develop a detailed design of the Mjölnir-E system incorporating the exportability features identified during Phase 1A. The specific EFs to be incorporated into the detailed design will be determined during the completion of the Phase 1A Study addressing 1) protection of critical technology, 2) added modularity, adaptability and international standardization, and 3) marketability in an international setting. ***FY 2025 Plans:*** Provide funding to help DoD programs plan for exportability in line with recent changes to DoD guidance, including the DoD instruction (DoDI) 5000.85 Major Capability Acquisition that requires DoD programs to design their systems for exportability as the default acquisition approach and the updated Join Capabilities Integration and Development System manual that integrates exportability into the DoD requirements planning process. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease is driven by a reorientation of Departmental priorities, while continuing to expand exportability efforts.			
Accomplishments/Planned Programs Subtotals	30.142	18.981	15.779

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605022D8Z / *Defense Exportability Features (DEF) Program*	**Project (Number/Name)** 013 / *Defense Exportability Features (DEF) Program*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DEF	TBD	Various : Various	97.603	30.142		18.981		15.779		-		15.779	-	-	-
		Subtotal	97.603	30.142		18.981		15.779		-		15.779	-	-	N/A

Remarks

N/A.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	97.603	30.142		18.981		15.779		-		15.779	-	-	N/A

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605022D8Z / *Defense Exportability Features (DEF) Program*	**Project (Number/Name)** 013 / *Defense Exportability Features (DEF) Program*

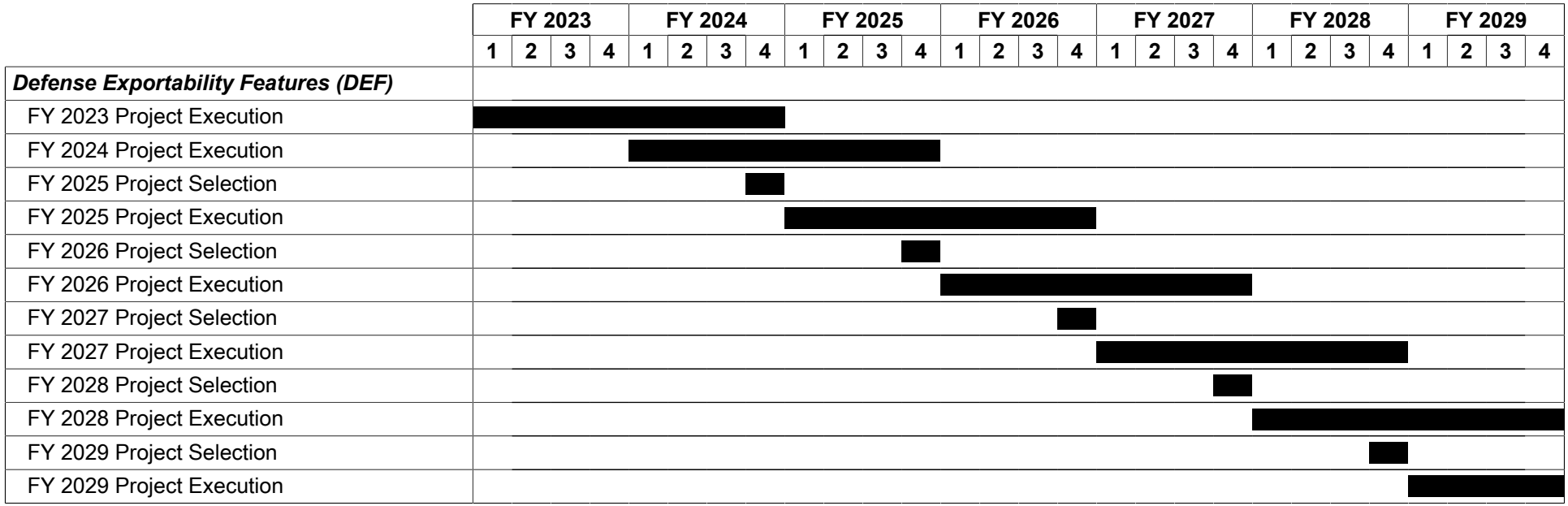


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605022D8Z / *Defense Exportability Features (DEF) Program*	**Project (Number/Name)** 013 / *Defense Exportability Features (DEF) Program*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Defense Exportability Features (DEF)				
FY 2023 Project Execution	1	2023	4	2024
FY 2024 Project Execution	1	2024	4	2025
FY 2025 Project Selection	4	2024	4	2024
FY 2025 Project Execution	1	2025	4	2026
FY 2026 Project Selection	4	2025	4	2025
FY 2026 Project Execution	1	2026	4	2027
FY 2027 Project Selection	4	2026	4	2026
FY 2027 Project Execution	1	2027	4	2028
FY 2028 Project Selection	4	2027	4	2027
FY 2028 Project Execution	1	2028	4	2029
FY 2029 Project Selection	4	2028	4	2028
FY 2029 Project Execution	1	2029	4	2029

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605027D8Z / *OUSD(C) IT Development Initiative*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	53.522	5.605	5.456	7.564	-	7.564	8.276	6.776	6.917	7.055	Continuing	Continuing
927: *Next Generation Resource Management System*	53.522	5.605	5.456	7.564	-	7.564	8.276	6.776	6.917	7.055	Continuing	Continuing

Note

New Start (Y/N): No

+$7.564 million is required to support Next Generation Resource Management Systems (NGRMS) of which +$1,911 million increase is to support the PPBE Reform efforts.

A. Mission Description and Budget Item Justification

As the Department of Defense's strategic, operational, and tactical plans and objectives transform the war fighter with new capabilities and doctrine, the budgeting and accountability of funds used to pursue the Department's objectives will become more complicated and detailed allowing senior leaders to make decisions with supporting rationale for the taxpayer. Incorporating information technology towards current and emerging business processes manifesting into a state-of-the art system of systems will result in increasing efficiencies, timely diagnostics, and reducing lifecycle costs to maintain, sustain, and repair.

This initiative exploits emerging technology, processes, trends, capabilities, and techniques to incorporate state-of-the-art information technology enabling the ability, agility, and level of fidelity to collect, process, administrate, and report resource management data and to automate business processes within a more robust analytical environment within the Office of the Under Secretary of Defense (Comptroller) (OUSD(C)).

Next Generation Resource Management Systems (NGRMS):

The OUSD(C) is responsible for advising the Secretary of Defense on all Defense budgetary and fiscal matters, for Defense budget development and execution, and for overseeing financial management across the Department. The OUSD(C) has a broad set of responsibilities in supporting the Planning, Programming, Budget, and Execution (PPBE) process. The Office of the Director, Cost Assessment and Program Evaluation (CAPE), provides independent analytic advice to the Secretary of Defense on all aspects of the Defense program, including alternative weapon systems and force structures, the development and evaluation of program and defense program alternatives, and the cost-effectiveness of defense systems. There is a critical need for the development of a state-of-the-art information technology system to modernize and replace multiple, antiquated legacy systems and processes used to formulate, justify, present, and defend the entire Department of Defense budget in the OUSD(C) to meet Title 10 and Title 31 mission and reporting requirements. NGRMS is critical in formulating the DoD Budget and thereby providing the necessary fund requests to defend the homeland, deter strategic attacks against the United States, our Allies and partners. By formulating and presenting the DoD budget, NGRMS, through our Services, is helping to deter aggression, yet ensuring that we are prepared to prevail in conflicts with a prioritization to the PRC challenge in the Indo-Pacific and the Russian challenge in Europe. Through a strong DoD Budget, NGRMS is a major factor in building a resilient Joint Force and Defense ecosystem. The Comptroller's plan for mitigating the deficiencies and capability gaps associated with current systems is the development of the NGRMS.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605027D8Z *I OUSD(C) IT Development Initiative*

The OUSD(C) and CAPE use multiple systems to formulate, justify, distribute, and execute the DoD budgets. The information managed by the budget formulation and programming systems is redundant, and reconciliation of information is difficult and inefficient. These systems require extensive manpower investments to provide executives the information needed to make timely key financial decisions. The OUSD(C) and CAPE require a more efficient and effective Defense budget environment that optimizes the budget cycle to ensure users are processing and reporting efficiently, and DoD Senior Leadership has the information to make informed, critical decisions.

The OUSD(C) requires capabilities to provide for the effective formulation, and justification of the Defense budget to be adaptable and modern. The requirement is for:

• Automated exchange and reconciliation of budget data
• Improved efficiency through the utilization of a unified budgetary model
• Instantaneous ability to generate data for management reviews and decisions
• Capability to accommodate emerging business practices
• Agile methods to launch and terminate new development efforts more quickly
• Seamlessly combine the out puts of multiple efforts at various levels of maturity for organizational responsiveness and alternative resource allocation for innovation adoption

As of the 3rd Quarter FY 2022, NGRMS has been developed and has deployed Initial Operational Capability (IOC) to all Department of Defense Services and agencies. The system has been designed as a single system with a unified data source for OUSD(C) and CAPE, which supports the reforming and modernizing of the PPBE process. It provides a single, integrated system that employs the latest technologies to fulfill the Department's financial management responsibilities in an effective, efficient, and adaptable manner. The new system's agile development approach compliments the continuous and ongoing studies and changes to the PPBE and appropriation processes to prevent stagnant complexities. It also provides twenty-first century information technology that allows users to view information from multiple fully integrated modules simultaneously, e.g., current year budget submission, decision documents from previous years, and budget execution information.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	5.938	5.456	5.653	-	5.653
Current President's Budget	5.605	5.456	7.564	-	7.564
Total Adjustments	-0.333	0.000	1.911	-	1.911
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• PPBE Reform	-	-	1.911	-	1.911

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605027D8Z / *OUSD(C) IT Development Initiative*

• Other Program Adjustments	-0.333	-	-	-	-

Change Summary Explanation

+$7.564 million is required to support Next Generation Resource Management Systems (NGRMS) of which +$1,911 million increase is to support the PPBE Reform efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0605027D8Z / *OUSD(C) IT Development Initiative*				Project (Number/Name) 927 / *Next Generation Resource Management System*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
927: *Next Generation Resource Management System*	53.522	5.605	5.456	7.564	-	7.564	8.276	6.776	6.917	7.055	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase due to PPBE Reform initiative.

A. Mission Description and Budget Item Justification

The Office of the Under Secretary of Defense (Comptroller) (OUSD(C)) is responsible for advising the Secretary of Defense on all Defense budgetary and fiscal matters, for Defense budget development and execution, and for overseeing financial management across the Department. The OUSD(C) has a broad set of responsibilities in supporting the Planning, Programming, Budget and Execution (PPBE) process. The Office of the Director, Cost Assessment and Program Evaluation (CAPE), provides independent analytic advice to the Secretary of Defense on all aspects of the Defense program, including alternative weapon systems and force structures, the development and evaluation of programs and defense program alternatives, and the cost-effectiveness of defense systems.

OUSD(C) and CAPE use multiple systems to formulate, justify, distribute, and execute DoD budgets. The information managed by the budget formulation and programming systems is redundant, and reconciliation of information is difficult and inefficient. These systems require extensive manpower investments to provide executives the information needed to make timely key financial decisions. The OUSD(C) and CAPE require a more efficient and effective Defense budget environment that optimizes the budget cycle to ensure users are processing and reporting efficiently and DoD Senior Leadership has the information to make informed, critical decisions.

The OUSD(C) requires capabilities to provide for the effective formulation, and justification of the Defense budget to be adaptable and modern. This includes the following:

• Automated exchange and reconciliation of budget data
• Improved efficiency through the utilization of a unified budgetary model
• Instantaneous ability to generate data for management reviews and decisions
• Capability to accommodate emerging business practices
• Agile methods to launch and terminate new development efforts more quickly
• Seamlessly combine the outputs of multiple efforts at various levels of maturity for organizational responsiveness and alternative resource allocation for innovation adoption

As of the 3rd Quarter FY 2022, NGRMS has been developed and has deployed Initial Operating Capability (IOC) to all Department of Defense Services and agencies. The system has been designed as a single system with a unified data source for OUSD(C) and CAPE, which supports the reforming and modernizing of the PPBE

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605027D8Z / *OUSD(C) IT Development Initiative*	**Project (Number/Name)** 927 / *Next Generation Resource Management System*

process. It provides a single, integrated system that employs the latest technologies to fulfill the Department's financial management responsibilities in an effective, efficient, and adaptable manner. The new system's agile development approach compliments the continuous and ongoing studies and changes to the PPBE and appropriation processes to prevent stagnant complexities. It also provides twenty-first century information technology that allows users to view information from multiple fully integrated modules simultaneously, e.g., current year budget submission, decision documents from previous years, and budget execution information.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Next Generation Resource Management System	5.605	5.456	7.564
Description: Plan, develop, test and evaluate the system components (i.e. unified database, expert system, cross domain security, enterprise service bus, applications, services) and supportability requirements in modernizing the budget formulation, programming execution, and reporting capabilities for the Department of Defense. Activities will include, but not be limited to, the preparation of all documentation required for Clinger-Cohen Compliance and acquisition regulations, developing requests for proposals, and oversight and management of contracts and deliverables. ***FY 2024 Plans:*** FY 2024 planned development will include additional cyber security enhancements (as necessary), additional data and structure standardizations, and more robust analytical ties to execution. ***FY 2025 Plans:*** FY 2025 planned development will include additional cyber security enhancements (as necessary), additional data and structure standardizations, cloud implementations (STRATUS), and more robust analytical ties to execution ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase for NGRMS from FY 2024 to FY 2025 includes cloud implementation requirements for development as the system moves to Full Operational Capability (FOC). We anticipate the higher level of funding will meet the future development efforts to reform and modernize the existing PPBE and appropriation processes.			
Accomplishments/Planned Programs Subtotals	5.605	5.456	7.564

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Agile development to replace legacy mission subsystems capabilities. Current development effort is provided by KPMG contract # HQ0034-23-F-0266, period of performance June 21, 2023 – June 20, 2026.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605027D8Z / *OUSD(C) IT Development Initiative*	Project (Number/Name) 927 / *Next Generation Resource Management System*	

Product Development ($ in Millions)

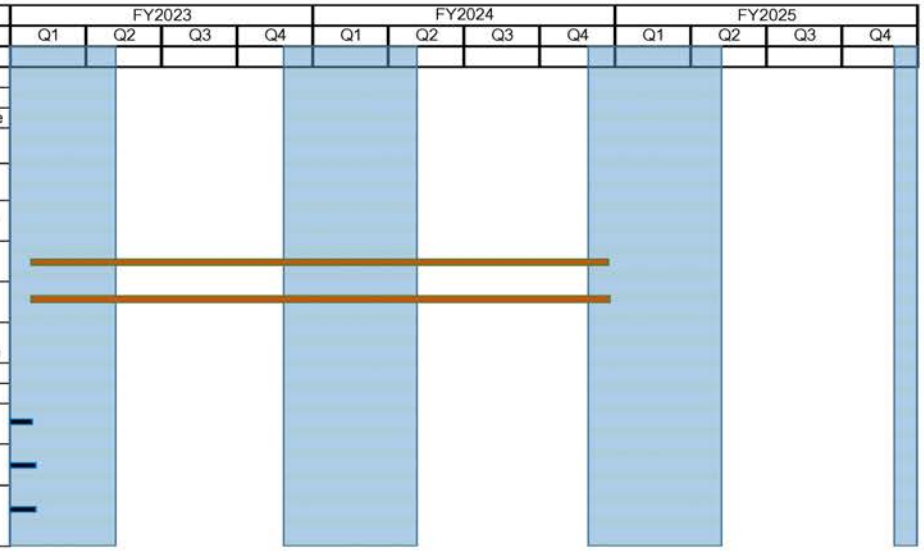
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development	C/FFP	OUSD(C) : Pentagon & Contractor Off-site Facility	53.522	5.605		5.456		7.564		-		7.564	Continuing	Continuing	Continuing
		Subtotal	53.522	5.605		5.456		7.564		-		7.564	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	53.522	5.605		5.456		7.564		-		7.564	Continuing	Continuing	N/A

Remarks

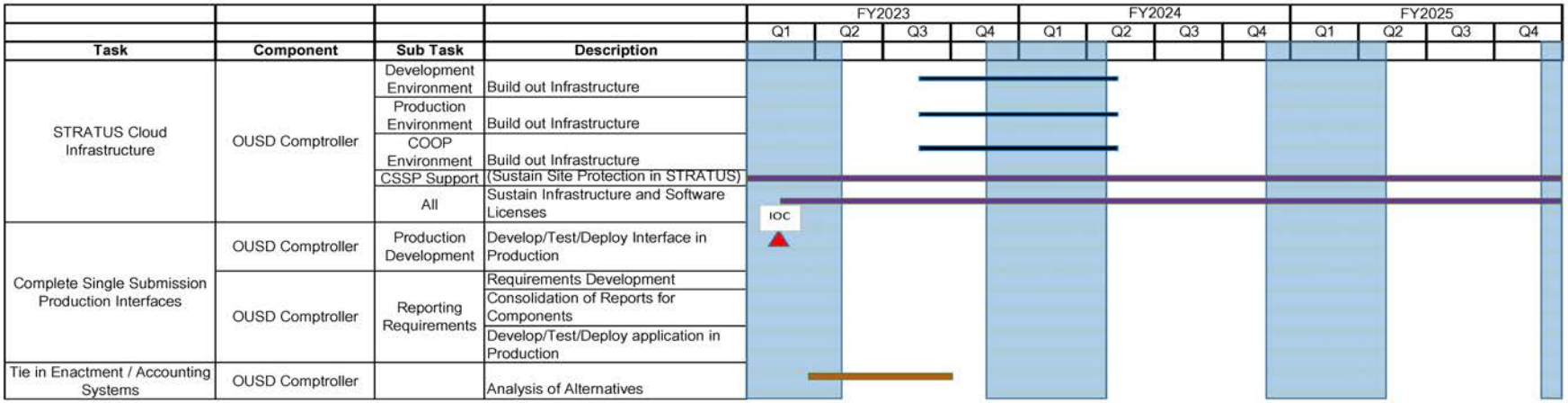
Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605027D8Z / *OUSD(C) IT Development Initiative*	**Project (Number/Name)** 927 / *Next Generation Resource Management System*

Task	Component	Sub Task	Description
Single Submission	OUSD Comptroller	Acquisition	Complete 2nd Acquisition
			Award 2nd Contract
	OUSD Comptroller	Prototype Development	Develop Single Submission Prototype
			Test/Deploy New System
	OUSD Comptroller	Iterative Development Initiatives	NIP Controls, based on changing requirements
			Integrations with Manpower updates, baed on changing requirements
			Continuous development to support changing budget requirements
	OUSD Comptroller/CAPE		Diagnostic/Tie Point Reports, based on changing requirements
Database Consolidation	OUSD Comptroller		Legacy Systems (CIS, PRCP, SDCS)
			Analysis of Alternatives
Data Analytics	OUSD Comptroller	Develop,Test & Deploy	Requirements Development
			Develop/Test/Deploy application, in Production (QLIK)
			Deploy application to End-Users, in Production (QLIK)
			Deploy application to End-Users, in Production (QLIK), including Manpower



NGRMS Funding Legend	
FY22 RDT&E Funds	
FY23 RDT&E Funds	

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605027D8Z / *OUSD(C) IT Development Initiative*	**Project (Number/Name)** 927 / *Next Generation Resource Management System*



Task	Component	Sub Task	Description
STRATUS Cloud Infrastructure	OUSD Comptroller	Development Environment	Build out Infrastructure
		Production Environment	Build out Infrastructure
		COOP Environment	Build out Infrastructure
		CSSP Support	(Sustain Site Protection in STRATUS)
		All	Sustain Infrastructure and Software Licenses
Complete Single Submission Production Interfaces	OUSD Comptroller	Production Development	Develop/Test/Deploy Interface in Production
	OUSD Comptroller	Reporting Requirements	Requirements Development
			Consolidation of Reports for Components
			Develop/Test/Deploy application in Production
Tie in Enactment / Accounting Systems	OUSD Comptroller		Analysis of Alternatives

NGRMS Funding Legend
FY21 and out O&M
FY22 RDT&E Funds
FY23 RDT&E Funds

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605027D8Z / *OUSD(C) IT Development Initiative*	**Project (Number/Name)** 927 / *Next Generation Resource Management System*

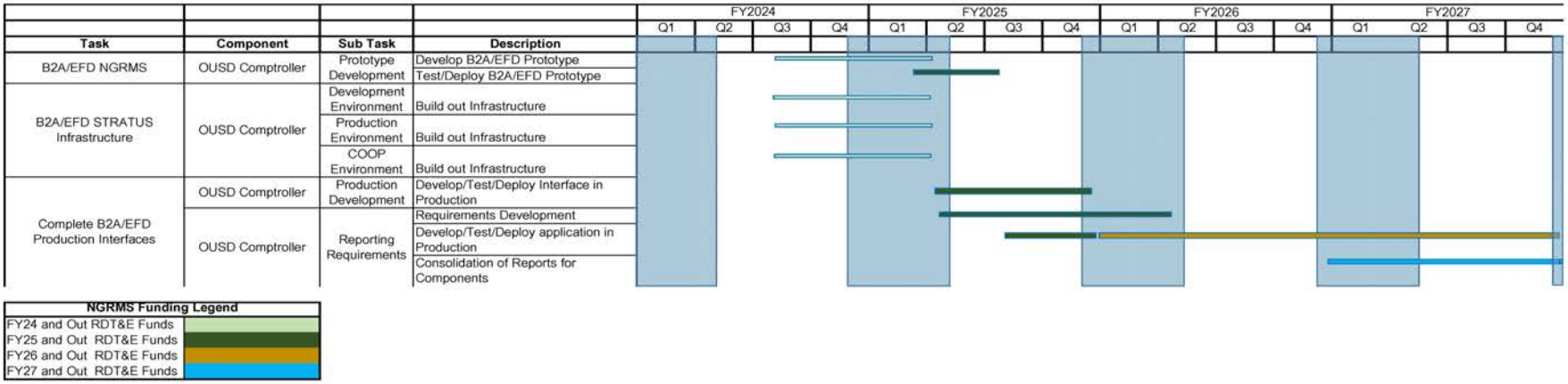


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605027D8Z / *OUSD(C) IT Development Initiative*	**Project (Number/Name)** 927 / *Next Generation Resource Management System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NGRMS				
Legacy Development (discontinued)	1	2017	3	2018
Single Submission	3	2018	4	2024
Complete Single Submission Product Interfaces	4	2021	3	2022
Data Analytics	1	2022	1	2023
STRATUS Infrastructure Buildout	4	2023	2	2024
Tie in Enactment/Accounting System	2	2023	3	2023
B2A/EFD NGRMS	1	2024	3	2025
B2A/EFD STRATUS Infrastructure	3	2024	1	2025
Complete B2A/EFD Production Interfaces	2	2025	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605210D8Z / *Defense-Wide Electronic Procurement Capabilities*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	108.850	6.649	6.899	9.485	-	9.485	9.740	8.204	8.455	8.600	Continuing	Continuing
021: *Defense-Wide Electronic Procurement Capabilities-Contingency*	108.850	6.649	6.899	9.485	-	9.485	9.740	8.204	8.455	8.600	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiative to Build Sustainable and Long-Term Advantage.

Defense-wide Electronic Procurement Capabilities provides for the development of critical enterprise-wide e-business requirements for the procurement community. These requirements result from statute, regulation, process re-engineering, internal control requirements, and audit findings. This program provides for the introduction of innovative, time and cost-saving technologies into procurement processes across the Department. Resources are provided to conduct agile software development and testing on new or modified defense-wide e-business applications to ensure system and application development, integration, and demonstration of production representative systems and capabilities.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	6.949	6.899	7.050	-	7.050
Current President's Budget	6.649	6.899	9.485	-	9.485
Total Adjustments	-0.300	0.000	2.435	-	2.435
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.046	-			
• SBIR/STTR Transfer	-0.254	-			
• Program Adjustment	-	-	2.435	-	2.435

Change Summary Explanation

The change in FY 2025 is to speed delivery of capabilities of the Electronic Contract Writing Module (ECWM) to the 4th Estate contracting agencies to enable complete transition from Procurement-Desktop Defense (PD2) prior to its scheduled retirement.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605210D8Z / *Defense-Wide Electronic Procurement Capabilities*	Project (Number/Name) 021 / *Defense-Wide Electronic Procurement Capabilities- Contingency*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
021: *Defense-Wide Electronic Procurement Capabilities- Contingency*	108.850	6.649	6.899	9.485	-	9.485	9.740	8.204	8.455	8.600	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Defense-wide Electronic Procurement Capabilities provides for the development of critical e-business enterprise-wide requirements for the procurement community. These requirements may result from statute, regulation, process re-engineering or internal control requirements. This program provides opportunities for the introduction of innovative, time-saving, and cost-saving technologies into procurement processes across the Department. Resources are provided to conduct agile software development and testing on new or modified defense-wide e-business applications to ensure system and application development, integration, and demonstration of production representative systems and capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense-Wide Electronic Procurement Capabilities- Contingency	6.649	6.899	9.485
Description: FY 2023 accomplishments continued to focus on improving the identification and tracking of government furnished property (GFP) and resolving audit findings – by completing the transition of the Plant Clearance Screening capability and initiating development of GFP phase IV interchange capabilities in the Procurement Integrated Enterprise Environment (PIEE). DPC also continued improvement and implementation of the purchase request, procurement, and catalog data standards. Additional standard development was initiated for other transactions. Further developed the modules in PIEE to improve invoice handling, surveillance performance monitoring, and appointments for purchase cardholders and contracting officer representatives. Enhanced supply chain risk data mining for vendor threat mitigation. Used robotics and automation efforts for streamlining procurement processes (e.g., FY 2019 Section 889 look-up) and expanding data mining. Began transition of the Procurement Business Intelligence Service (PBIS) to OSD Comptroller Advanced Analytics (ADVANA) hosting and build-out of ADVANA Procurement dashboards. Initiated pilot for future fourth estate contract writing capability.			
FY 2024 Plans: FY 2024 plans continue to focus on improving the identification and tracking of government furnished property and resolving audit findings – completing Phase IV capabilities in the PIEE to support Component accountable property systems. DPC will also focus on continued development of the catalog data standard to enable better price comparisons. Additional standard development will focus improvements in procurement and purchase request data standards, particularly for the spares, other transactions, and financial assistance types of awards. Further develop the modules in PIEE to use the catalog data standard to drive better product and pricing identification; as well as better integrate the module capabilities to enable better efficiencies and transparency.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605210D8Z / *Defense-Wide Electronic Procurement Capabilities*	**Project (Number/Name)** 021 / *Defense-Wide Electronic Procurement Capabilities- Contingency*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Complete transition of former DCMA contract administration capabilities. Continue to enhance supply chain risk data mining and data collection capabilities in the SPRS supporting statutory requirements. Leverage robotics and automation efforts for streamlining procurement processes and expanding data mining – implementing capabilities to support annual procurement data validation requirements. Develop enterprise requirements coming from emerging statutes and regulations for the fourth estate contract writing capability. Complete initial deployment of the 4th estate contract writing capability. ***FY 2025 Plans:*** FY 2025 plans will focus on deploying enterprise-wide capabilities in PIEE to support both the Services' new contract writing capabilities and Procure-to-Pay (P2P) initiatives including deployment of the other transactions / assistance and catalog data standard, expansion of the centralized solicitation module capabilities, and a modernized clause logic capability. Enhance the 4th estate contract writing module for identified requirements beyond the initial minimal viable product, including complex contract types and other transactions. Continue to develop the procurement analytics area of ADVANA, integrating additional data feeds from enterprise systems and leveraging artificial intelligence and robotics for increasing detail for management decisions. Continue to enhance supply chain performance and risk data mining and data collection capabilities in the SPRS supporting statutory requirements and Department initiatives. Develop enterprise requirements coming from emerging statutes and regulations for the procurement community. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase from FY 2024 to FY 2025 is to speed delivery of capabilities of the Electronic Contract Writing Module (ECWM) to the 4th Estate contracting agencies to enable complete transition from Procurement-Desktop Defense (PD2) prior to its scheduled retirement.			
Accomplishments/Planned Programs Subtotals	6.649	6.899	9.485

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605210D8Z / *Defense-Wide Electronic Procurement Capabilities*	Project (Number/Name) 021 / *Defense-Wide Electronic Procurement Capabilities- Contingency*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Business Systems Development	Various	DLA, JTIC, WPAFB : FORT BELVOIR, SCOTT AFB	104.571	6.649		6.899		9.485		-		9.485	-	-	-
		Subtotal	104.571	6.649		6.899		9.485		-		9.485	-	-	N/A

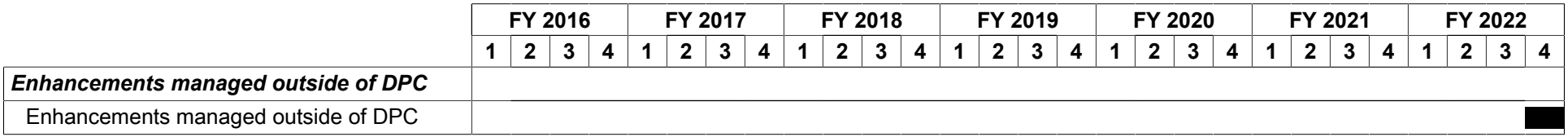
Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Interoperability Testing	Various	DLA, JTIC, WPAFB : FORT BELVOIR, SCOTT AFB	4.279	-		-		-		-		-	-	-	-
		Subtotal	4.279	-		-		-		-		-	-	-	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	108.850	6.649		6.899		9.485		-		9.485	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605210D8Z / *Defense-Wide Electronic Procurement Capabilities*	**Project (Number/Name)** 021 / *Defense-Wide Electronic Procurement Capabilities- Contingency*



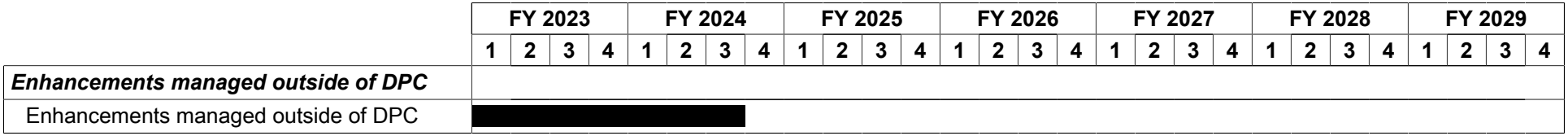


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605210D8Z / *Defense-Wide Electronic Procurement Capabilities*	**Project (Number/Name)** 021 / *Defense-Wide Electronic Procurement Capabilities- Contingency*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Enhancements managed outside of DPC				
Enhancements managed outside of DPC	4	2022	3	2024

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	540.321	245.366	297.586	150.436	-	150.436	144.963	117.134	121.783	125.524	Continuing	Continuing
902: *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*	420.347	128.017	226.170	95.331	-	95.331	87.678	64.621	67.083	69.234	Continuing	Continuing
903: *Access to Advanced Packaging and Testing - Demonstration*	81.112	96.171	44.391	30.221	-	30.221	31.012	26.284	27.375	28.172	Continuing	Continuing
905: *Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration*	38.862	21.178	27.025	24.884	-	24.884	26.273	26.229	27.325	28.118	Continuing	Continuing

Note

New Start (Y/N): No

FY 2024: An Errata was approved to realign $50.000 million to Procurement, DW, Major Equipment, OSD to support the Accelerate Procurement and Fielding of Innovative Technologies (APFIT) program. These funds are realigned from Project 902, Access to State-of-the-Art (SOTA) Microelectronics - Demonstration. The current plan of $226.170 million will decrease to $176.170 million.

A. Mission Description and Budget Item Justification

This effort supports the Department's initiatives to Build Sustainable and Long-Term Advantage, Defend the Homeland, and Deter Aggression.

This program supports microelectronics modernization activities that enable defense systems to keep pace with commercial microelectronics technological advances, reduce reliance on obsolete microelectronics, and mitigate the Department’s reliance on sole source foundries for assured state-of-the-art (SOTA) microelectronics. It addresses the challenges of 1) having enduring access to a multiplicity of modern manufacturing processes that require commercial volumes to maintain long term viability and 2) protecting the intellectual property (IP) of the microelectronic parts that are manufactured.

Microelectronics technology is a critical enabler for the development of new systems and sustainment of fielded systems required for all four 2022 National Defense Strategy (NDS) priorities. In addition, this program directly supports the NDS priority of building a resilient Joint Force and defense ecosystem through modernization of key capabilities and fostering pathways to adapt SOTA commercial and dual-use technologies to Defense needs. The program also supports the NDS objective of Making the Right Technology Investments by supporting the domestic microelectronics innovation ecosystem and partnering with industry to quickly incorporate market-driven commercial advances with military-relevant capabilities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*

This program supports the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) Microelectronics Modernization Roadmap. The primary areas of focus of this roadmap include the following: access to SOTA microelectronics technology, access to advanced packaging and test; access to radiation hardened microelectronics; access to non-complementary metal oxide semiconductor (CMOS) SOTA microelectronics for radio frequency and optoelectronic applications; disruptive research and development; education and workforce development; trusted foundry and obsolescence.

Recognizing that an assured supply of microelectronics is a U.S. Government-wide concern, this activity will interface with interagency partners to account for interagency requirements, opportunities for collaboration, and strategic decisions that can be made to limit the overall cost of these requirements to the USG.

This activity is being led by the Under Secretary of Defense for Research and Engineering.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	252.963	297.586	220.678	-	220.678
Current President's Budget	245.366	297.586	150.436	-	150.436
Total Adjustments	-7.597	0.000	-70.242	-	-70.242
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-7.572	-			
• Program Adjustments	-	0.000	-70.242	-	-70.242
• Cancelled Account	-0.025	-	-	-	-

Change Summary Explanation

FY 2024: An errata was submitted and approved to realign $50.000M to Procurement, DW, Major Equipment, OSD to support the Accelerate Procurement and Fielding of Innovative Technologies (APFIT) program.

FY 2025 funding decrease of $70.242 million consists of:

1) Realignment of $50.000 million to Procurement, Defense-Wide, Major Equipment, OSD in Program Element 0901388D8Z to support the Accelerate Procurement and Fielding of Innovative Technologies (APFIT) program.
2) Realignment of $4.548 million to the Multi-Domain Joint Operations (MDJO) Program Element 0604791D8Z, to identify and transition emerging technologies that close time-critical joint gaps in multi-domain missions.
3) Realignment of $4.567 million to the Mission Engineering and Integration (ME&I) Program Element 0603142D8Z, to better analyze recommended technologies that eliminate or disrupt adversary kill chains.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605294D8Z *I Trusted and Assured Microelectronics*

4) Realignment of $1.338 million to the Foreign Comparative Testing (FCT) Program Element 0603133D8Z to bolster international engagement and collaboration with allies and partners.
5) Realignment of $3.978 million to the Defense Innovation Acceleration (DIA) Program Element 0603838D8Z due to higher departmental priorities.
6) Defense wide reduction of $1.565M.
7) Internal realignment to support PE 0603379D8Z of $4.550.
8) Increase of $.304M for economic adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605294D8Z / *Trusted and Assured Microelectronics*	Project (Number/Name) 902 / *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
902: *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*	420.347	128.017	226.170	95.331	-	95.331	87.678	64.621	67.083	69.234	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

FY 2024: An Errata was approved to realign $50.000 million from this project to Procurement, DW, Major Equipment, OSD to support the Accelerate Procurement and Fielding of Innovative Technologies (APFIT) program. The current plan of $226.170 million will decrease to $176.170 million.

A. Mission Description and Budget Item Justification

This project establishes multiple strategic partnerships with existing commercial state-of-the-art (SOTA) domestic foundries to develop a data-driven, risk-based approach to supply chain protection and demonstrate the assured manufacture of advanced electronic components.

Successful implementation will transition these technologies to use in DoD programs, obtain access to multiple commercial microelectronics facilities, establish secure design capabilities, and solidify a data-driven approach to supply chain protection. It also includes keeping pace with the rapid advancements in microelectronics technology and the globalization of this industry sector. It will provide the basics for updating and strengthening the DoD assurance policy and includes collaborating with industry to develop data driven evidence-based standards.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Access to State-of-the-Art (SOTA) Microelectronics - Demonstration	128.017	226.170	95.331
Description: Foundry Access: This project implements multiple foundries process design kit (PDK) environments ensuring the government is not dependent on one single source for critical components. Demonstrate hardware through dedicated and multi-project wafer runs at multiple foundries. Commercial foundries generate enormous amounts of data on their processes as a best practice for quality assurance to improve reliability and increase yield. The Foundry program collects and utilizes this data to generate and allow quantitative comparison of performance and security metrics in the design and test stage of the microelectronics lifecycle, thereby mitigating risk.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 902 / *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Rapid Access to Microelectronic Prototypes (RAMP): This activity includes demonstrating the ability to fabricate classified and/or export-controlled designs in on-shore commercial foundries. Funding will establish multiple strategic partnerships with existing commercial domestic microelectronics design vendors and foundries to develop a data-driven, risk-based approach to supply chain protection and demonstrate the assured manufacture of advanced electronic components. This project demonstrates the technical means for protecting intellectual property (IP) and obfuscating the final user function from the supply chain will be realized using personalization, programmability and software, following application specific integrated circuit (ASIC) manufacturing. Efforts are on-going to update International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR) policy in this area. Funding supports activities to enhance the export control regime so that it maintains or strengthens current protections while enabling access to commercial capabilities, products, and IP. Rapid Access to Microelectronic Prototypes – Commercial (RAMP-C): This project enables the DoD and the defense industrial base to collaborate with the commercial microelectronics industry to increase prototype development, demonstration, and address the war fighter's need to maintain and modernize weapon systems as the threat landscape shifts. This project enables T&AM program to demonstrate, by FY 2025, full access to U.S. commercial state-of-the-art (SOTA) design, foundry, and advanced packaging capability and meet DoD's unique needs within two to three years for modernization, including for RH and photonics applications. The capability will reduce the time needed to replace microelectronics components that are generations behind the commercial sector, move away from off-shore sources for SOTA commercial integrated circuits, and accelerate the demonstration and adoption of evidence-based assurance methods throughout the microelectronics lifecycle and supply chain. Reducing the timeline by up to two years not only benefits export control and classified system protection, but also the requirements of the FY 2020 National Defense Authorization Act Section 224 for the DoD to implement commercial standards for the acquisition of assured microelectronics products. ***FY 2024 Plans:*** Foundry Access: • Continue to enhance access to SOTA fabrication ecosystem. • Maintain program of record access to assured fabrication flow and fund multi-project wafer production runs at multiple SOTA domestic sources.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 902 / *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Rapid Assured Microelectronics Prototypes (RAMP): Continue to mature the RAMP operational capability that will: • Continue to enhance secure design and cloud capability with new tools/techniques • Continue to utilize traceability and provenance mechanisms to verify and vet data sources in a zero-trust architecture and enhance ability of DoD/Defense Industrial Base to design state-of-the-art (SOTA) microelectronics. • Continue to quantify transition of designs to prototypes and programs of record and maintain persistence in lifecycle assurance data and intellectual property. • Continue to demonstrate rapid transition of DoD-relevant field programmable gate array-based capabilities to structured • Application-specific integrated circuits (ASICs), with security capabilities to protect DoD intellectual property (IP) during manufacture. Rapid Access to Microelectronic Prototypes – Commercial (RAMP-C): A leading edge (<7 nanometer), commercially-viable, U.S.-located domestic wafer foundry ecosystem access is established. The ecosystem will have capability on the order of > 26,000 wafer starts per month for design and manufacturing of evidence-based assured, dual-use commercial and DoD custom integrated circuits. A successful project WILL enable the following: • Access to a SOTA U.S. wafer foundry • Access to commercial and critical evidence-based assured dual-use commercial off-the-shelf (COTS) integrated circuits • Access to capabilities necessary to develop and demonstrate evidence-based assured custom DoD integrated circuits • The jump-start in commercial use of the domestic foundry by key U.S. fabless companies • Establishment and demonstration of a viable design ecosystem including access to 3rd party design modules • The reduction in the cost differential of building a U.S.-located wafer foundry verses off-shore • The enablement of commercially-supported and enduring U.S. logic foundry capability • Development of the DoD prototype demonstrator designs with the defense industrial base (DIB) to accelerate technology transition • Leverage the expertise of commercial industry to develop and demonstrate novel capabilities for design of SOTA with assurance. Cloud/Electronic Design Automation (EDA): • Continue activities for prototype demonstration of an emulation based evidence-based assurance design flows			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 902 / *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Continue efforts to raise the technology readiness level (TRL) of pilot emulation efforts to production readiness by standardizing the cloud based emulation workflows, enhancing the robustness of the flows, and bringing them up to IL-4 Design Acceleration and Transition: • Continue activities with Design Acceleration Centers to leverage commercial intellectual property (IP), Electronics Design Automation (EDA), and processes enabling prototype transition acceleration • Continue to expand and accelerate development and insertion of IP for application-specific integrated circuit (ASIC) and Chiplet security including authentication, Firmware Attestation and Decryption and system-on-chip (SOC) Interface encryption. • Continue to develop and insert tools and techniques for Protect of silicon IP during manufacturing and test phase, including multi-chip package (MCP). • Continue demonstration of using commercial off-the-shelf (COTS) parts in more critical DoD applications utilizing the inherent personalization features ***FY 2025 Plans:*** Foundry Access: • Continue to enhance access to SOTA fabrication ecosystem. • Maintain program of record access to assured fabrication flow and fund multi-project wafer production runs at multiple state-of-the-art (SOTA) domestic sources. Rapid Access to Microelectronic Prototypes – Commercial (RAMP-C): A leading edge (<7 nanometer), commercially-viable, U.S.-located domestic wafer foundry ecosystem access is established. The ecosystem will have capability on the order of > 26,000 wafer starts per month for design and manufacturing of evidence-based assured, dual-use commercial and DoD custom integrated circuits. This project will enable the following: • Access to a state-of-the-art (SOTA) U.S. wafer foundry. • Access to commercial and critical evidence-based assured dual-use commercial off-the-shelf (COTS) integrated circuits. • Access to capabilities necessary to develop evidence-based assured custom DoD integrated circuits. • The jump-start in commercial use of the domestic foundry by key U.S. fabless companies. • Establishment of a viable design ecosystem including access to 3rd party design modules. • The reduction in the cost differential of building a U.S.-located wafer foundry verses off-shore. • The enablement of commercially-supported and enduring U.S. logic foundry capability. • Leverage the expertise of commercial industry to develop and demonstrate novel capabilities for design of SOTA with assurance.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 902 / *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Cloud/Electronic Design Automation (EDA): • Continue activities for prototype demonstration of an emulation based evidence-based assurance design flows • Continue efforts to raise the technology readiness level (TRL) of pilot emulation efforts to production readiness by standardizing the cloud based emulation workflows, enhancing the robustness of the flows, and bringing them up to IL-4 Design Acceleration and Transition: • Continue activities with Design Acceleration Centers to leverage commercial intellectual property (IP), EDA, and processes enabling prototype transition acceleration • Continue to expand and accelerate development and insertion of IP for application-specific integrated circuit (ASIC) and Chiplet security including authentication, Firmware Attestation and Decryption and system-on-chip (SOC) Interface encryption. • Continue to develop and insert tools and techniques for Protect of silicon IP during manufacturing and test phase, including multi-chip package (MCP). • Continue demonstration of using COTS parts in more critical DoD applications utilizing the inherent personalization features ***FY 2024 to FY 2025 Increase/Decrease Statement:*** A decrease of $50M in FY 2024 was for approved Errata. The Revised Plan for FY 2024 is $176.170M, not $226.170M The decrease of -$81.032 million between FY 2024 and FY 2025 is due to realignments totaling $14.431 million to 0604791D8Z Multi-Domain Joint Operations (MDJO), 0603133D8Z Foreign Comparative Testing, 0603142D8Z Mission Engineering & Integration (ME&I), and 0603838D8Z Defense Innovation Acceleration (DIA) due to higher departmental priorities as described in Program Change Summary above, and a planned $66.691 million reduction due to the maturation of activities on the Rapid Assured Microelectronics Prototypes (RAMP) and Rapid Assured Microelectronics Prototypes – Commercial (RAMP-C) projects.			
Accomplishments/Planned Programs Subtotals	128.017	226.170	95.331

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 902 / *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Access to State-of-the-Art (SOTA) Microelectronics - Demonstration	MIPR	Defense Advanced Research Projects Agency, Air Force, Army, Navy, National Security Agency : Various	420.347	128.017	Mar 2023	226.170	Mar 2024	95.331	Mar 2025	-		95.331	Continuing	Continuing	-
		Subtotal	420.347	128.017		226.170		95.331		-		95.331	Continuing	Continuing	N/A

Remarks

N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	420.347	128.017		226.170		95.331		-		95.331	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers.
2) Funding increase of $.193 million FY 2025 for Economic Assumptions.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 902 / *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Access to State-of-the-Art (SOTA) Microelectronics - Demonstration																												
Third party intellectual property (IP) and electronic design automation (EDA) tool repository demonstration																												
New microelectronics demonstration, and capability insertion																												
Demonstrate assured access to multiple SOTA domestic fabrication sources.																												
Demonstrate access to multiple SOTA commercial foundry process design kits (PDKs)																												
Management/Technical Support																												
Microelectronics Assurance and Supply Chain Standards and Best Practices Demonstration																												
U.S. Government and Industry Engagement for demonstration of data driven evidence-based assurance tools, techniques, and risk-based metrics																												
Application-specific integrated circuit (ASIC) netlist analysis capability demonstration																												
Field programmable gate array (FPGA) analyses tool demonstration																												
Assured design demonstration and evaluation																												
Government and industry engagement to demonstrate data driven evidence-based assurance																												

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 902 / *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*

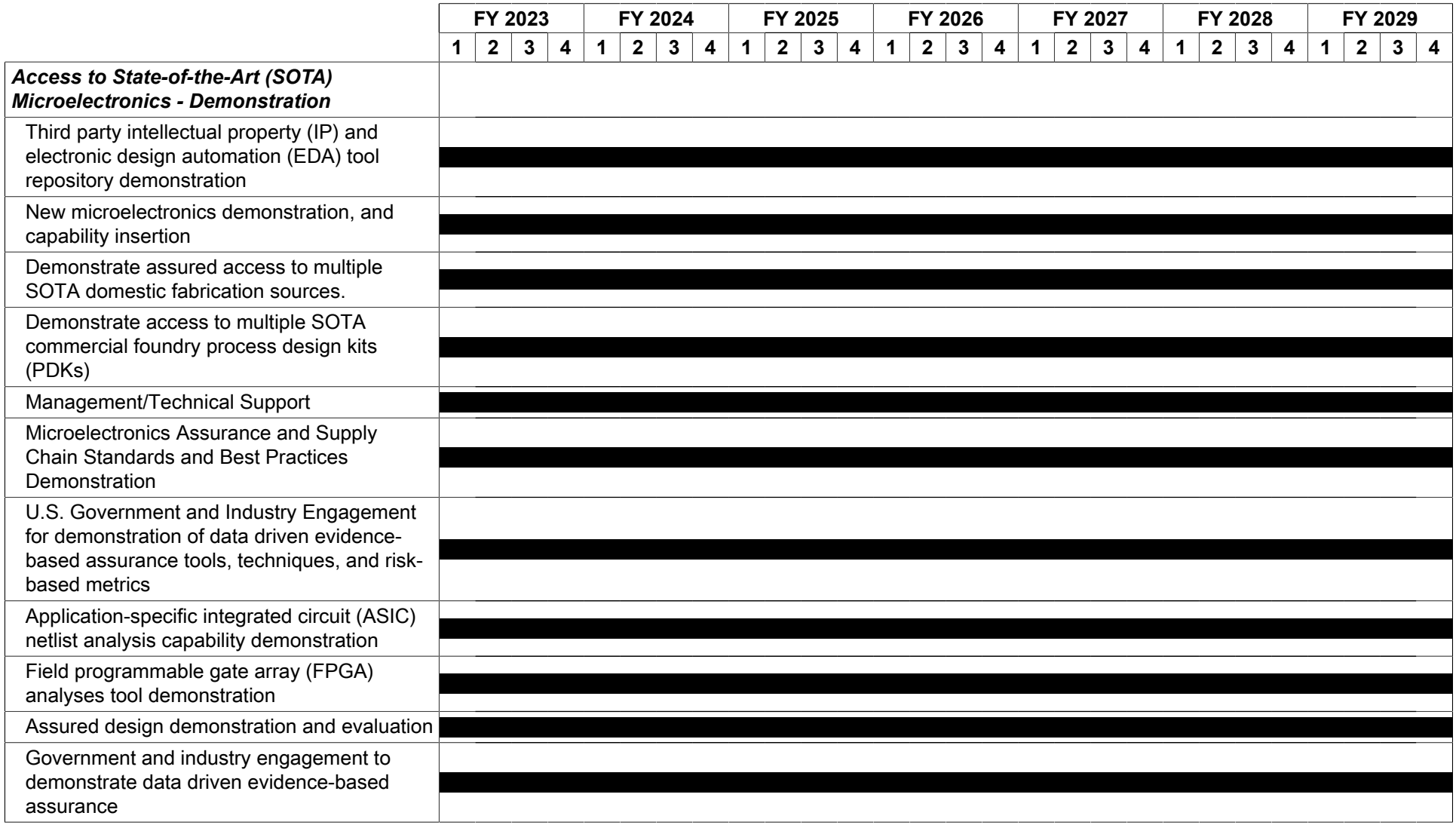


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 902 / *Access to State-of-the-Art (SOTA) Microelectronics - Demonstration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Access to State-of-the-Art (SOTA) Microelectronics - Demonstration				
Third party intellectual property (IP) and electronic design automation (EDA) tool repository demonstration	2	2021	4	2029
New microelectronics demonstration, and capability insertion	2	2021	4	2029
Demonstrate assured access to multiple SOTA domestic fabrication sources.	2	2021	4	2029
Demonstrate access to multiple SOTA commercial foundry process design kits (PDKs)	2	2021	4	2029
Management/Technical Support	2	2021	4	2029
Microelectronics Assurance and Supply Chain Standards and Best Practices Demonstration	2	2021	4	2029
U.S. Government and Industry Engagement for demonstration of data driven evidence-based assurance tools, techniques, and risk-based metrics	2	2021	4	2029
Application-specific integrated circuit (ASIC) netlist analysis capability demonstration	2	2021	4	2029
Field programmable gate array (FPGA) analyses tool demonstration	2	2021	4	2029
Assured design demonstration and evaluation	2	2021	4	2029
Government and industry engagement to demonstrate data driven evidence-based assurance	2	2021	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605294D8Z / *Trusted and Assured Microelectronics*	Project (Number/Name) 903 / *Access to Advanced Packaging and Testing - Demonstration*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
903: *Access to Advanced Packaging and Testing - Demonstration*	81.112	96.171	44.391	30.221	-	30.221	31.012	26.284	27.375	28.172	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This project will leverage existing commercially available expertise and capability to deliver self-sustaining digital and radio frequency (RF) state-of-the-art (SOTA) heterogeneous integrated packaging (SHIP), assembly, and test capability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Access to Advanced Packaging and Testing - Demonstration	96.171	44.391	30.221

Description: This project will deliver an on-shore SHIP assembly and test capability. It will demonstrate access to, personalization of, and customization for supporting the DoD programs. It will enable a revolutionary leap in system performance that will greatly reduce size, weight and power (SWaP) by incorporating the immense advances in SOTA commercial off the shelf (COTS) processing technologies, such as field programmable gate arrays (FPGAs), microprocessors, and graphics processing units (GPUs).

Leading-edge semiconductor design and manufacturing technology forms the basis for many of the DoD modernization priorities. Most dual-use COTS parts used for modernization priorities are currently manufactured in Asian facilities that do not provide measurable assurance.

This program enhancement demonstrates the DoD access to leading-edge semiconductor technology through domestic U.S.-located sources of custom and dual-use leading edge integrated circuits utilizing heterogeneous integration and advanced packaging.

This enables implementation of complex, computation intensive artificial intelligence (AI) algorithms for DoD AI and Autonomy applications. It will also facilitate use of integrated cyber-security methods/cryptography in the DoD hardware and utilization of the complex computational capability required for active electronically scanned array (AESA) phase array radar system and electronic warfare (EW) and communications including 5G radio access network (RAN) systems. The proposed large constellations of

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 903 / *Access to Advanced Packaging and Testing - Demonstration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
networked satellites will also require leading-edge semiconductor components to enable real time communication and on-satellite computation. The program prototypes will transition to military systems through strategic efforts based on collaboration with the DoD acquisition community, program offices, and the Defense Industrial Base. ***FY 2024 Plans:*** • Continue to demonstrate enhanced secure design and secure packaging with new tools and techniques. • Continue to demonstrate heterogeneous integration for secure packaging and test. • Demonstrate prototype hardware and additional program-driven designs of increasing complexity and capability/performance. • Continue Secure Assembly & Test environment maturation with prototypes • Continue Advanced Packaging technologies maturation with prototypes • Continue Advanced Packaging prototype targeted transition projects • Continue Advanced Packaging reliability and qualification risk reduction projects • Accelerate and expand the development of multi-chip packaging (MCP) prototype demonstrators in collaboration with DoD Programs and the defense industry for process intensive applications and radio frequency (RF) such as active electronically scanned array (AESA) radar, cognitive electronic warfare (EW) and autonomy, while enhancing security for protecting intellectual property (IP) and critical program information (CPI). • Expand and accelerate demonstration of prototype hardware and additional program-driven designs of increasing complexity and capability/performance: Layered approach for IP & CPI protection Enhanced resistance to security and cyber threats Customized personalization per Program or MCP Risk reduction by much greater visibility into the supply chain and assembly process, including quantifiable data for material tracking, meteorology and process control ***FY 2025 Plans:*** • Continue sub-system/system demonstrations leveraging heterogeneous integrated packaging targeting DoD transitions • Continue advanced packaging prototypes targeting DoD transitions • Continue advanced packaging reliability and qualification risk reduction projects • Demonstrate prototype hardware and additional program-driven designs of increasing complexity and capability/performance. • Accelerate and expand the development of multi-chip packaging (MCP) prototype demonstrators in collaboration with DoD Programs and the defense industry for process intensive applications and RF such as AESA Radar, cognitive EW and autonomy, while enhancing security for protecting IP and CPI.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 903 / *Access to Advanced Packaging and Testing - Demonstration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Expand and accelerate demonstration of prototype hardware and additional program-driven designs of increasing complexity and capability/performance: Layered approach for IP & CPI protection Enhanced resistance to security and cyber threats Customized personalization per Program or multi-chip package (MCP) Risk reduction by much greater visibility into the supply chain and assembly process, including quantifiable data for material tracking, meteorology and process control • Continue to demonstrate enhanced secure design and secure packaging with new tools and techniques. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of -$14.231 million between FY 2024 and FY 2025 follows the establishment of the initial advanced packaging and testing capability, which will continue to deliver prototype designs and hardware for accelerating program adoption and for qualification, and further develop the infrastructure and process that supports International Traffic in Arms Regulations (ITAR)/ Export Administration Regulations (EAR), proprietary and security requirements.			
Accomplishments/Planned Programs Subtotals	96.171	44.391	30.221

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 903 / *Access to Advanced Packaging and Testing - Demonstration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Access to Advanced Packaging and Testing - Demonstration	MIPR	Defense Advanced Research Projects Agency, Air Force, Army, Navy, National Security Agency : Various	81.112	96.171	Mar 2023	44.391	Mar 2024	30.221	Mar 2025	-		30.221	Continuing	Continuing	-
		Subtotal	81.112	96.171		44.391		30.221		-		30.221	Continuing	Continuing	N/A

Remarks

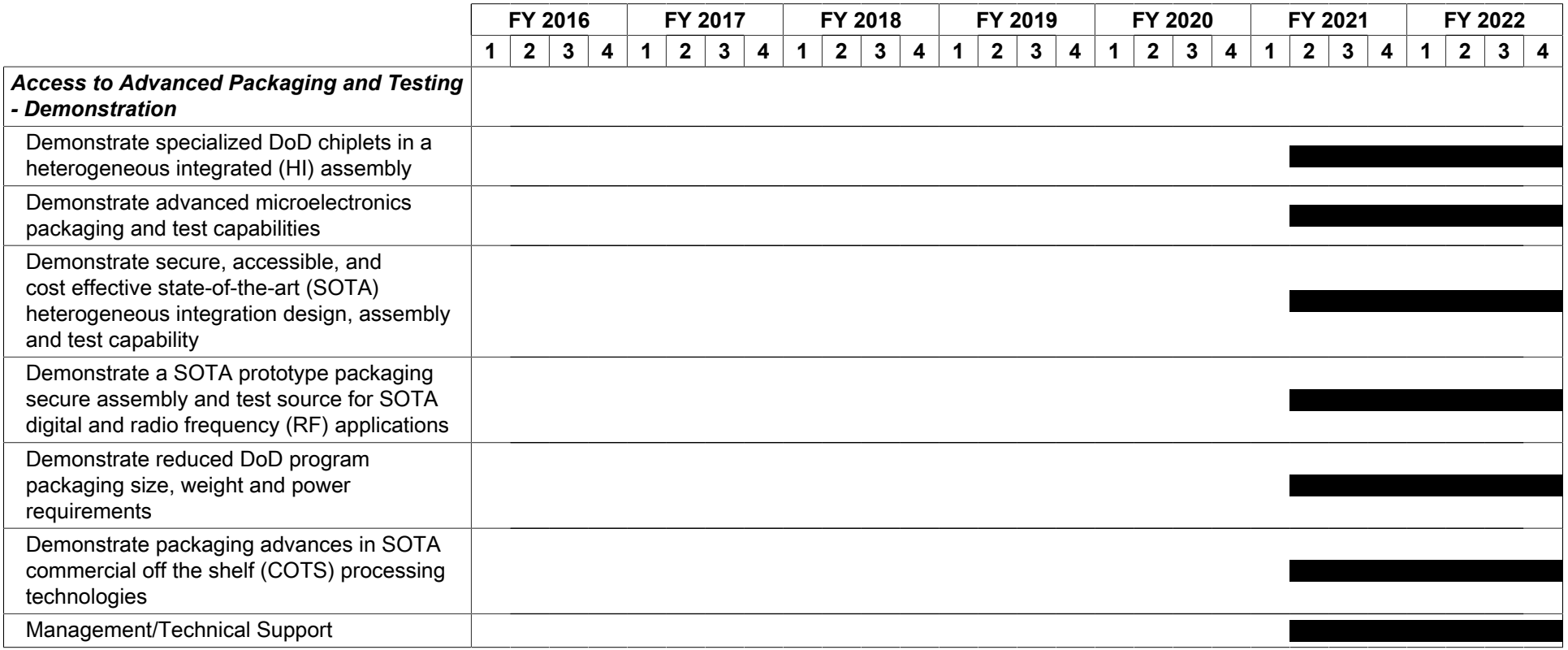
1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) A reduction of -$2.826M in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.
3) Funding increase of $.061 million FY 2025 for Economic Assumptions.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	81.112	96.171		44.391		30.221		-		30.221	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) A reduction of -$2.826M in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.
3) 2) Funding increase of $.061 million FY 2025 for Economic Assumptions.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 903 / *Access to Advanced Packaging and Testing - Demonstration*



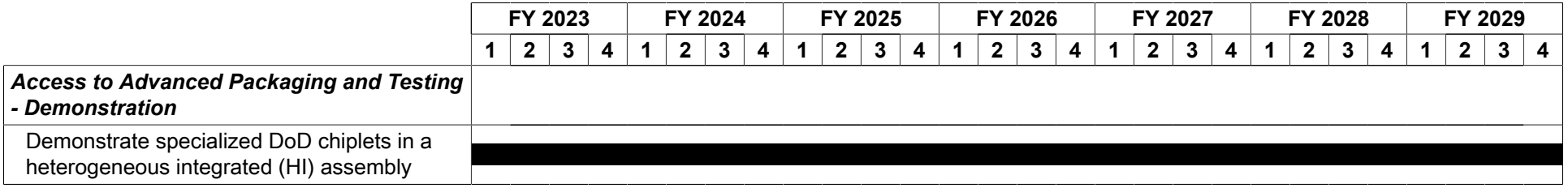


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 903 / *Access to Advanced Packaging and Testing - Demonstration*

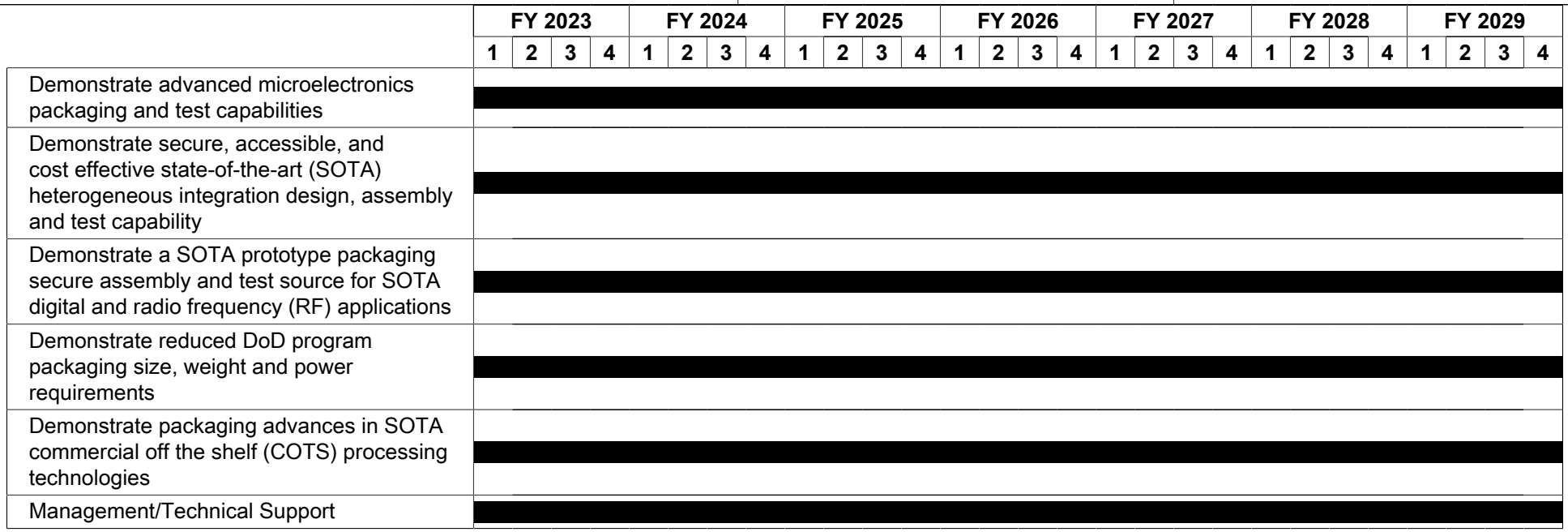


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 903 / *Access to Advanced Packaging and Testing - Demonstration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Access to Advanced Packaging and Testing - Demonstration				
Demonstrate specialized DoD chiplets in a heterogeneous integrated (HI) assembly	2	2021	4	2029
Demonstrate advanced microelectronics packaging and test capabilities	2	2021	4	2029
Demonstrate secure, accessible, and cost effective state-of-the-art (SOTA) heterogeneous integration design, assembly and test capability	2	2021	4	2029
Demonstrate a SOTA prototype packaging secure assembly and test source for SOTA digital and radio frequency (RF) applications	2	2021	4	2029
Demonstrate reduced DoD program packaging size, weight and power requirements	2	2021	4	2029
Demonstrate packaging advances in SOTA commercial off the shelf (COTS) processing technologies	2	2021	4	2029
Management/Technical Support	2	2021	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605294D8Z / *Trusted and Assured Microelectronics*	Project (Number/Name) 905 / *Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
905: *Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration*	38.862	21.178	27.025	24.884	-	24.884	26.273	26.229	27.325	28.118	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This project addresses the dual problems of commanding only a small market share while requiring an expansive range of unique microelectronics needs, from boutique and legacy components to state-of-the-art (SOTA) technologies. The Government must sustain specialty suppliers, given their criticality to national security. In particular, DoD needs access to a diverse microelectronics ecosystem to develop and acquire the application specific integrated circuit (ASICs) and personalized commercial off the shelf (COTS) components required for military radiation hardened and radio frequency and optical needs.

The Department frequently relies on commercial suppliers to optimize performance and reduce costs for sophisticated weapon system and secure network functionality. It is critical that the DoD has future access to subject matter expertise, technology, and manufacturing.

In addition to radiation hardened microelectronics needs, the DoD requires access to radio frequency (RF) and opto-electronic materials, foundries, and packaging facilities, to enable next generation sensors and communications. The DoD must leverage state-of-the-art microelectronic technologies driven by mega-trends such as 5G wireless and datacenters to combat emerging threats and provide overmatch technology to the warfighter. At the same time, the DoD must fill the gaps which are left unaddressed these dual-use mega-trends to satisfy mission requirements. Partnering in the maturation of state-of-the-art material sources, foundries, and packaging facilities, enables DoD to tailor process development towards unique DoD interests and encourage open access design, stimulating innovation and driving affordability. Additionally, critical investments must be made in the domestic supply chains supporting both RF Gallium Nitride (GaN) and integrated photonics to maintain the integrity and security of the Defense Industrial Base.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration	21.178	27.025	24.884
Description: Government-unique trusted design and manufacturing flows have been developed to enable a tier of trust for select ASIC parts; however, this approach addresses only a small subset of DoD microelectronics requirements (e.g., processors, memory, microcontrollers, field programmable gate arrays (FPGAs), and radiation-tolerant processors). The DoD will partner with the intelligence community, the Department of Energy, and the National Aeronautics and Space Administration to demonstrate radiation hardened components that permit systems to operate in space and other harsh			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 905 / *Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
environments. State-of-the-practice (SOTP) and SOTA technologies will be characterized and developed in support of Radiation Hardened By Process (RHBP) and Radiation Hardened By Design (RHBD) activities in support the DoD modernization programs with radiation hardened requirements. Beyond complementary metal-oxide semiconductor (CMOS) and radiation hardened microelectronics, radio frequency (RF)- and opto-electronic (RF/OE) technologies represent critically enable asymmetric DoD capabilities as well as domestic dual-use industrial base capabilities. RF/OE investments will demonstrate RF Gallium Nitride (GaN) and integrated photonic material sources, foundries, and packaging facilities. These investments will break microelectronics bottlenecks which directly enable compact millimeter wave transceivers and artificial intelligence training for edge compute. ***FY 2024 Plans:*** Planned activities are as follows: • Continue to demonstrate state-of-the-practice (SOTP) and state-of-the-art (SOTA) technologies utilizing RHBP and RHBD activities in support of DoD modernization programs with radiation hardened requirements. • Transition developed RH technologies into space and strategic programs. • Continue to mature large-diameter Nitrogen-Polar RF GaN material source and off-axis Silicon Carbide substrate. Foundries will assess epiwafers and provide feedback critical to baselining the N-Polar recipe. • Continue to mature multiple manufacturing readiness level (MRL)-6 state-of-the-art RF GaN foundries offering open access to millimeter wave device design and advanced interconnect services, progressing toward MRL-7. • Act upon industrial base assessment of the integrated photonics foundry ecosystem and mature strategic components of the domestic integrated photonics supply chain. • Demonstrate access to state-of-the-art RF GaN and integrated photonic foundries via advanced prototype demonstrators. • Increase capacity for RHBD technologies to support additional DoD programs ***FY 2025 Plans:*** Planned activities are as follows: • Continue to demonstrate SOTP and SOTA technologies utilizing RHBP and RHBD activities in support of DoD modernization programs with radiation hardened requirements. • Transition developed RH technologies into space and strategic programs. • Increase capacity for RHBD technologies to support additional DoD programs • Continue to mature multiple MRL-7 state-of-the-art RF GaN foundries offering open access to millimeter wave device design and advanced interconnect services			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 905 / *Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Continue to mature manufacturing readiness level (MRL)-6 multiple co-packaged optical chiplets and multi-chip packages offering high-bandwidth data transfer capabilities. • Continue to mature MRL-6 advanced semiconductor material production and baseline for insertion into multiple millimeter wave foundries. • Continue workforce development program for radio frequency (RF), power, and photonics. • Continue demonstration of next generation RF Gallium Nitride (GaN) power technologies to increase RF power efficiency and dramatically improve thermal efficiency and management, decreasing the power load on DoD platforms. • Continue demonstration of next generation RF GaN prototypes with improved performance at an affordable cost for drop in Line Replaceable Units (LRUs) in existing systems potentially without major architectural and structural redesign. Leverage commercial developments in next generation RF GaN power technologies to adapt for DoD applications. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** 1) A reduction of -$2.327M in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.			
Accomplishments/Planned Programs Subtotals	21.178	27.025	24.884

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 905 / *Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration	MIPR	Defense Advanced Research Projects Agency, Air Force, Army, Navy, National Security Agency : Various	38.862	21.178	Mar 2023	27.025	Mar 2024	24.884	Mar 2025	-		24.884	Continuing	Continuing	-
		Subtotal	38.862	21.178		27.025		24.884		-		24.884	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) A reduction of -$2.327M in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.
3) Funding increase of $.05 million FY 2025 for Economic Assumptions.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	38.862	21.178		27.025		24.884		-		24.884	Continuing	Continuing	N/A

Remarks

1) Updated FY 2023 Actuals, incorporating PB25 changes that include cancelled account and SBIR/STTR Transfers
2) A reduction of -$2.327M in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.
3) Funding increase of $.05 million FY 2025 for Economic Assumptions.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Micr oelectronics*	**Project (Number/Name)** 905 / *Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration*

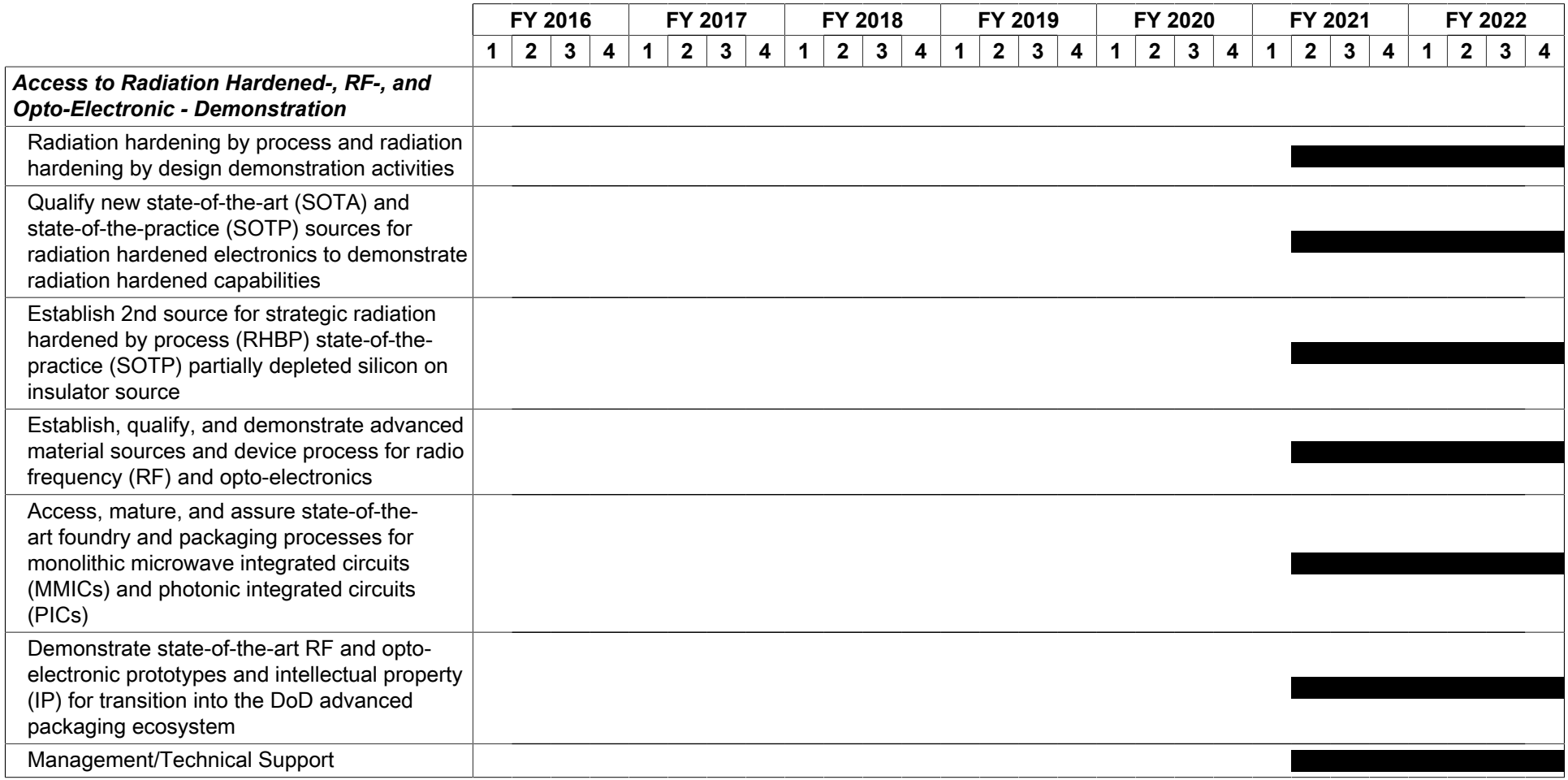


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 905 / *Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration*

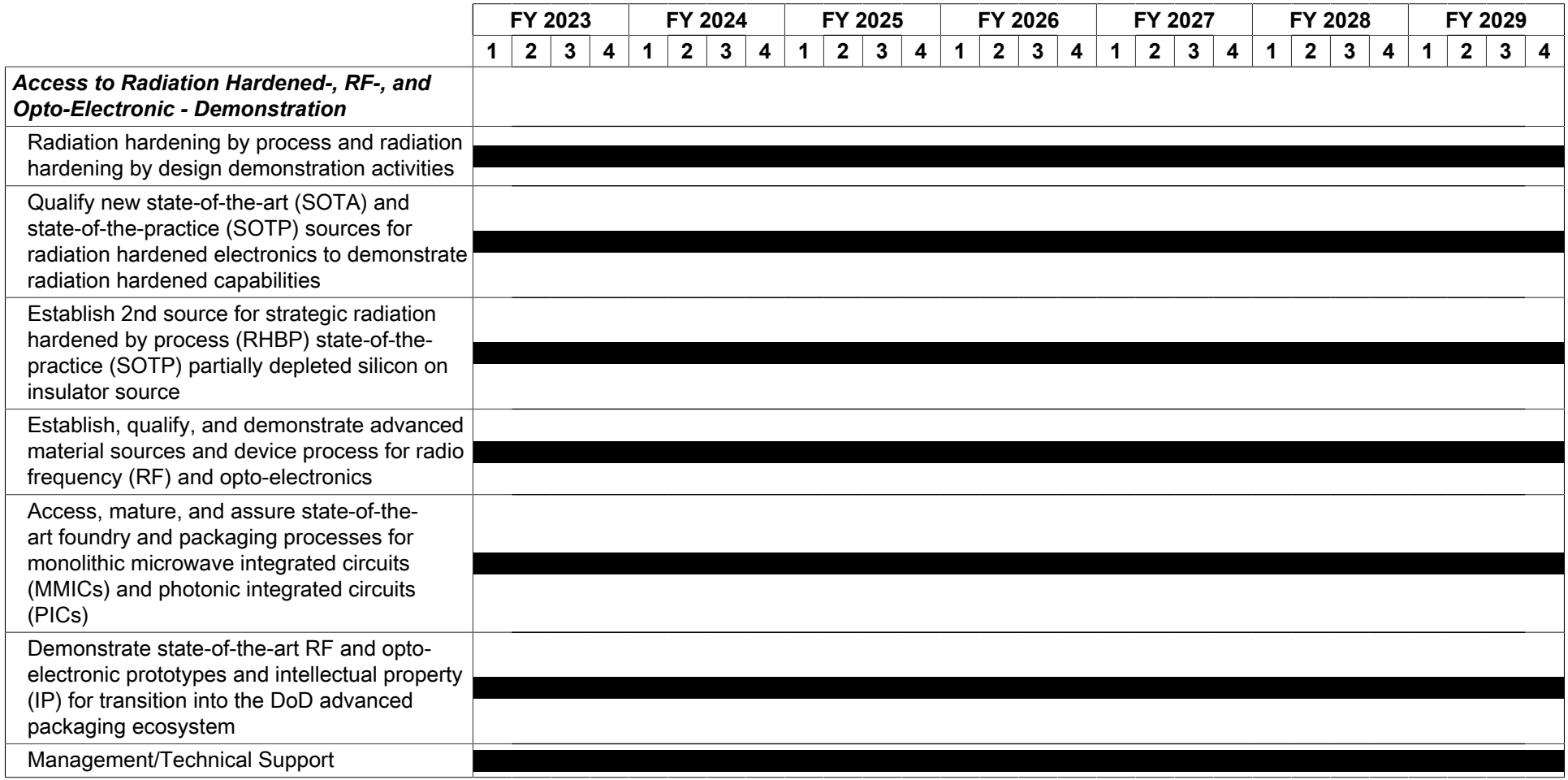


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605294D8Z / *Trusted and Assured Microelectronics*	**Project (Number/Name)** 905 / *Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Access to Radiation Hardened-, RF-, and Opto-Electronic - Demonstration				
Radiation hardening by process and radiation hardening by design demonstration activities	2	2021	4	2029
Qualify new state-of-the-art (SOTA) and state-of-the-practice (SOTP) sources for radiation hardened electronics to demonstrate radiation hardened capabilities	2	2021	4	2029
Establish 2nd source for strategic radiation hardened by process (RHBP) state-of-the-practice (SOTP) partially depleted silicon on insulator source	2	2021	4	2029
Establish, qualify, and demonstrate advanced material sources and device process for radio frequency (RF) and opto-electronics	2	2021	4	2029
Access, mature, and assure state-of-the-art foundry and packaging processes for monolithic microwave integrated circuits (MMICs) and photonic integrated circuits (PICs)	2	2021	4	2029
Demonstrate state-of-the-art RF and opto-electronic prototypes and intellectual property (IP) for transition into the DoD advanced packaging ecosystem	2	2021	4	2029
Management/Technical Support	2	2021	4	2029

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605649D8Z / *Acquisition Integration and Interoperability (AI2)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	12.804	-	12.804	13.597	14.002	14.508	15.773	Continuing	Continuing
952: *Acquisition Integration and Interoperability*	-	0.000	0.000	12.804	-	12.804	13.597	14.002	14.508	15.773	Continuing	Continuing

A. Mission Description and Budget Item Justification

AI2 was established to create an enduring acquisition infrastructure for delivering integrated joint, system-of-systems capabilities, and establish the necessary policies, forums, and processes to (1) Enable the delivery of integrated defense capabilities, leveraging Military Department and service-specific system acquisition; (2) Drive adoption of threat-based mission thread analysis to inform acquisition, resourcing, and requirements decisions; and (3) Support acquisition portfolio reviews to drive resourcing and enterprise decisions.

Program funding institutionalizes the lessons learned from the Department's Competitive Advantage Pathfinders (CAP) and Integrated Acquisition Portfolio Reviews (IAPR) and aligns service-specific system acquisition programs, prototypes, and Science and Technology (S&T) projects to deliver joint integrated capabilities. The program executes studies, analyses, and pathfinding efforts to (1) Govern the processes across the Defense Acquisition System to integrate and align portfolios and programs across the lifecycle from Services, OSD Components, and Combatant Commands (COCOMs); (2) Create an enduring infrastructure, tools, and processes for Service and OSD teams to better integrate system-of-systems capabilities; and (3) Remove regulatory and institutional barriers towards leveraging service-unique acquisitions for joint requirements.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	12.804	-	12.804
Total Adjustments	0.000	0.000	12.804	-	12.804
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Realignment from PE 0608648D8Z	-	-	12.804	-	12.804

Change Summary Explanation

New PE for funding purposes in FY 2025. Acquisition Integration and Interoperability has been funded under PE 0608648D8Z, Acquisition Visibility in Fiscal Years 2023 and 2024.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605649D8Z / *Acquisition Integration and Interoperability (AI2)*	Project (Number/Name) 952 / *Acquisition Integration and Interoperability*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
952: *Acquisition Integration and Interoperability*	-	0.000	0.000	12.804	-	12.804	13.597	14.002	14.508	15.773	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

AI2 was established to create an enduring acquisition infrastructure for delivering integrated joint, system-of-systems capabilities, and establish the necessary policies, forums, and processes to (1) Enable the delivery of integrated defense capabilities, leveraging Military Department and service-specific system acquisition; (2) Drive adoption of threat-based mission thread analysis to inform acquisition, resourcing, and requirements decisions; and (3) Support acquisition portfolio reviews to drive resourcing and enterprise decisions.

Program funding institutionalizes the lessons learned from the Department's Competitive Advantage Pathfinders (CAP) and Integrated Acquisition Portfolio Reviews (IAPR) and aligns service-specific system acquisition programs, prototypes, and Science and Technology (S&T) projects to deliver joint integrated capabilities. The program executes studies, analyses, and pathfinding efforts to (1) Govern the processes across the Defense Acquisition System to integrate and align portfolios and programs across the lifecycle from Services, OSD Components, and Combatant Commands (COCOMs); (2) Create an enduring infrastructure, tools, and processes for Service and OSD teams to better integrate system-of-systems capabilities; and (3) Remove regulatory and institutional barriers towards leveraging service-unique acquisitions for joint requirements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Acquisition Integration and Interoperability	-	-	12.804
Description: Program funding institutionalizes the lessons learned from the Department's Competitive Advantage Pathfinders (CAP) and Integrated Acquisition Portfolio Reviews (IAPR) and aligns service-specific system acquisition programs, prototypes, and Science and Technology (S&T) projects to deliver joint integrated capabilities. The program executes studies, analyses, and pathfinding efforts to (1) Govern the processes across the Defense Acquisition System to integrate and align portfolios and programs across the lifecycle from Services, OSD Components, and Combatant Commands (COCOMs); (2) Create an enduring infrastructure, tools, and processes for Service and OSD teams to better integrate system-of-systems capabilities; and (3) Remove regulatory and institutional barriers towards leveraging service-unique acquisitions for joint requirements.			
FY 2025 Plans: Enable the delivery of integrated defense capabilities, leveraging Military Department and service-specific system acquisition. Drive adoption of threat-based mission thread analysis to inform acquisition, resourcing, and requirements decisions. Support acquisition portfolio reviews to drive resourcing and enterprise decisions. Because AI2`s efforts span multiple mission applications, acquisition programs, experimental prototypes, and cross-weapons integration, its achievements are similarly			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605649D8Z / *Acquisition Integration and Interoperability (AI2)*	**Project (Number/Name)** 952 / *Acquisition Integration and Interoperability*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
complex and encompass various disciplines, including everything from policy, governance models, data integration, technical development, program management and operational integration - consistent with the AI2 charter which was established by USD(A&S). FY 2025 plans, which are directly aligned with the DEPSECDEF's objectives, per the 2022 National Defense Strategy priority of building a resilient and integrated joint force: - Integrated Acquisition Portfolio Reviews, assessing the acquisition health across various portfolios to drive timely and effective solutions. - Counter-C5ISRT for the pacing threat, including integration and alignment of the Department's portfolios and governance bodies spanning Cyber and Electronic Warfare (EW). - Joint Long-Range Fires (LRF), comprising interoperability requirements to align capabilities across the Services and fill remaining kill chain gaps. - Capability acquisition for Combined Joint All-Domain Command and Control (CJADC2), focusing on driving the Department`s efforts towards a centralized C2, and ensuring effective cross-service and joint integration. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in FY 2025 due to the breakout of Acquisition Integration and Interoperability funding from PE 0608648D8Z (Acquisition Visibility Software Pilot) to a separate Acquisition Integration and Interoperability (AI2) program element. The AI2 mission is not a software pilot program. Creating a separate program element enhances funds transparency.			
Accomplishments/Planned Programs Subtotals	-	-	12.804

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605649D8Z / *Acquisition Integration and Interoperability (AI2)*	**Project (Number/Name)** 952 / *Acquisition Integration and Interoperability*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Integration & Interoperability Expertise	C/Various	Multiple Commerical Vendors and UARCs : Contractor Sites	-	-		-		12.804	Nov 2024	-		12.804	Continuing	Continuing	12.804
		Subtotal	-	-		-		12.804		-		12.804	Continuing	Continuing	N/A

Remarks

Funds support contracted services for analysis and subject matter expertise from commercial vendors on competed contracts and task orders, as well as Federally Funded Research and Development Centers.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		12.804		-		12.804	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605649D8Z / *Acquisition Integration and Interoperability (AI2)*	**Project (Number/Name)** 952 / *Acquisition Integration and Interoperability*

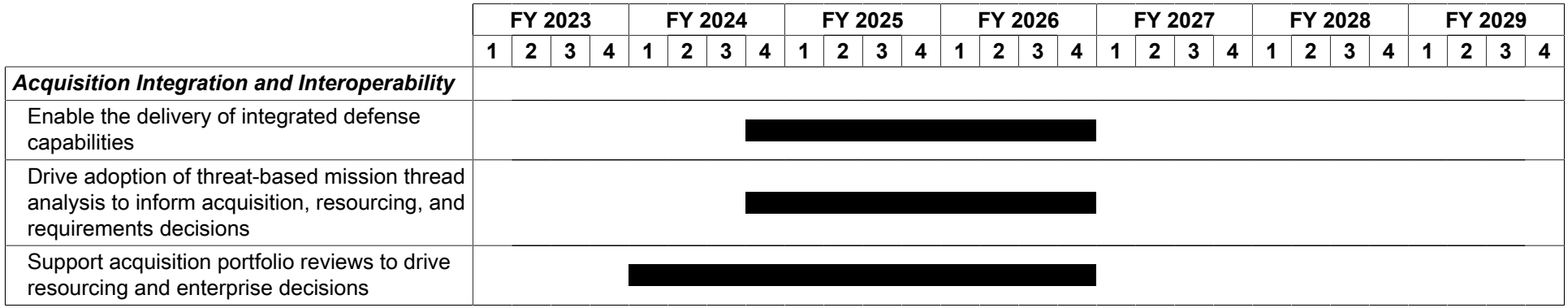


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605649D8Z / *Acquisition Integration and Interoperability (AI2)*	**Project (Number/Name)** 952 / *Acquisition Integration and Interoperability*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acquisition Integration and Interoperability				
Enable the delivery of integrated defense capabilities	4	2024	4	2026
Drive adoption of threat-based mission thread analysis to inform acquisition, resourcing, and requirements decisions	4	2024	4	2026
Support acquisition portfolio reviews to drive resourcing and enterprise decisions	1	2024	4	2026

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605755D8Z / *Radiological and Nuclear Defense Modernization System Dev/Demo*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	3.575	0.000	3.575	3.993	3.936	3.919	3.992	Continuing	Continuing
778: *Radiological and Nuclear Defense Mod Sys Dev/Demo*	-	-	-	3.575	0.000	3.575	3.993	3.936	3.919	3.992	Continuing	Continuing

Note

New Start (Y/N): No

This is a PE Name change from PE 0505167D8Z Domestic Prepare Against WMD in FY 2024 to PE 0605755D8Z / Rad/Nuc Defense Modernization Systems Dev/ Demo in FY 2025. The name and PE number was changed to more accurately reflect the prescribed purpose of the Program Element.

A. Mission Description and Budget Item Justification

As a FY 2024 new start, this program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence and being prepared to prevail, and Build Sustainable and Long-Term Advantage.

The Radiological and Nuclear (R/N) Detection Gear Modernization and Procurement for the Joint Force research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: improving the Department's capability to survive and operate in the Radiological and Nuclear environment – including in the information and early warning domain; reinforcing our own warfighting advantages by providing increased capability to detect and identify radiological and nuclear threats; and enhancing our interoperability and access to address acute forms of coercion. This program is specifically geared to provide modern improved networked R/N detection, indications and identification capability to the warfighter and to upgrade obsolete equipment and increase capability to continue to operate in the R/N environment (2022 National Defense Strategy and the 2023 CWMD Strategy).

RDAs provide enhanced R/N capabilities. The Radiological and Nuclear Defense Capability Development portfolio enables DoD to provide Joint force and National Guard capability development, acquisition and modernization funding to prepare for and respond to any emergency involving nuclear and/or radiological events in the United States; provide a capability for the joint force to withstand, operate through, and recover from an R/N event and will ensure DoD strategic direction aligns with the National Defense Strategy's priorities; is a necessary action to improve resilience; and promotes integrated deterrence of WMD with state, local and other federal agencies. This funding line is the only BA5 funding in the Department dedicated to providing improved R/N capability to the warfighter.

The Radiological and Nuclear Defense Capability Development portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices.

The Office of the Secretary of Defense uses the Radiological and Nuclear Defense Capability Development portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment

strategy is used to meet emergent operational and capability needs validated by the Joint Force and the National Guard Bureau, yielding new fielded capabilities within one to two years.

The Radiological and Nuclear Defense Capability Development portfolio: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to fielded capabilities that improve capability to detect and identify radiological and nuclear threats. This program bridges the gap between basic research to accelerate and enable transition of technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry.

This program funds labor, materials, and travel to support the requirements of this program, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	3.575	0.000	3.575
Total Adjustments	0.000	0.000	3.575	-	3.575
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Realignment from PE 0505167D8Z	-	-	3.575	-	3.575

Change Summary Explanation

None.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605755D8Z / *Radiological and Nuclear Defense Modernization System Dev/Demo*	Project (Number/Name) 778 / *Radiological and Nuclear Defense Mod Sys Dev/Demo*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
778: *Radiological and Nuclear Defense Mod Sys Dev/Demo*	-	-	-	3.575	0.000	3.575	3.993	3.936	3.919	3.992	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This is a PE Name change from PE 0505167D8Z Domestic Prepare Against WMD in FY 2024 to PE 0605755D8Z / Rad/Nuc Defense Modernization Systems Dev/ Demo in FY 2025. The name and PE number was changed to more accurately reflect the prescribed purpose of the Program Element.

A. Mission Description and Budget Item Justification

As a FY 2024 new start, this program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence and being prepared to prevail, and Build Sustainable and Long-Term Advantage.

The Radiological and Nuclear (R/N) Detection Gear Modernization and Procurement for the Joint Force research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: improving the Department's capability to survive and operate in the Radiological and Nuclear environment – including in the information and early warning domain; reinforcing our own warfighting advantages by providing increased capability to detect and identify radiological and nuclear threats; and enhancing our interoperability and access to address acute forms of coercion. This program is specifically geared to provide modern improved networked R/N detection, indications and identification capability to the warfighter and to upgrade obsolete equipment and increase capability to continue to operate in the R/N environment (2022 National Defense Strategy and the 2023 CWMD Strategy).

RDAs provide enhanced R/N capabilities. The Radiological and Nuclear Defense Capability Development portfolio enables DoD to provide Joint force and National Guard capability development, acquisition and modernization funding to prepare for and respond to any emergency involving nuclear and/or radiological events in the United States; provide a capability for the joint force to withstand, operate through, and recover from an R/N event and will ensure DoD strategic direction aligns with the National Defense Strategy's priorities; is a necessary action to improve resilience; and promotes integrated deterrence of WMD with state, local and other federal agencies. This funding line is the only BA5 funding in the Department dedicated to providing improved R/N capability to the warfighter.
The Radiological and Nuclear Defense Capability Development portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices.

The Office of the Secretary of Defense uses the Radiological and Nuclear Defense Capability Development portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment strategy is used to meet emergent operational and capability needs validated by the Joint Force and the National Guard Bureau, yielding new fielded capabilities within one to two years.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605755D8Z / *Radiological and Nuclear Defense Modernization System Dev/Demo*	**Project (Number/Name)** 778 / *Radiological and Nuclear Defense Mod Sys Dev/Demo*

The Radiological and Nuclear Defense Capability Development portfolio: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to fielded capabilities that improve capability to detect and identify radiological and nuclear threats. This program bridges the gap between basic research to accelerate and enable transition of technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry.

This program funds labor, materials, and travel to support the requirements of this program, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Radiological and Nuclear Mod Sys Dev/Demo	-	-	3.575
Description: The Radiological and Nuclear Defense Capability Modernization: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to R/N Defense fielded capabilities. Significant S&T investments in prototype development by the Department of Defense, other Federal agencies, and industry are leveraged, capitalizing on mature technologies to accelerate and enable transition to fielded capabilities. Resulting fielded capabilities protect the warfighter, support indications and early warning, command and control, defend vulnerabilities in networks, programs, facilities, and weapons systems; and enable the disablement or defeat of WMD and their delivery systems. ***FY 2025 Plans:*** • Develop, transition, and field operational R/N Detection, Identification, Early warning, and Command Control capabilities to the Joint Force and the National Guard Bureau. • Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities. • Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified projects. • Continue development of Joint Incident Site Communications Capability Architecture for the National Guard CBRN Response Enterprise. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** This is a PE Name change from PE 0505167D8Z Domestic Prepare Against WMD in FY 2024 to PE 0605755D8Z / Rad/Nuc Defense Modernization Systems Dev/Demo in FY 2025. The name and PE number was changed to more accurately reflect the prescribed purpose of the Program Element.			
Accomplishments/Planned Programs Subtotals	-	-	3.575

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605755D8Z / *Radiological and Nuclear Defense Modernization System Dev/Demo*	**Project (Number/Name)** 778 / *Radiological and Nuclear Defense Mod Sys Dev/Demo*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A.

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605755D8Z / *Radiological and Nuclear Defense Modernization System Dev/Demo*	**Project (Number/Name)** 778 / *Radiological and Nuclear Defense Mod Sys Dev/Demo*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop, transition, and field operational R/N Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.	C/TBD	TBD : TBD	-	-		-		1.192	Jan 2025	-		1.192	Continuing	Continuing	-
Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities.	C/TBD	TBD : TBD	-	-		-		1.192	Jan 2025	-		1.192	Continuing	Continuing	-
Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified program	C/TBD	TBD : TBD	-	-		-		1.191	Jan 2025	-		1.191	Continuing	Continuing	-
		Subtotal	-	-		-		3.575		-		3.575	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		3.575		-		3.575	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605755D8Z / *Radiological and Nuclear Defense Modernization System Dev/Demo*	**Project (Number/Name)** 778 / *Radiological and Nuclear Defense Mod Sys Dev/Demo*

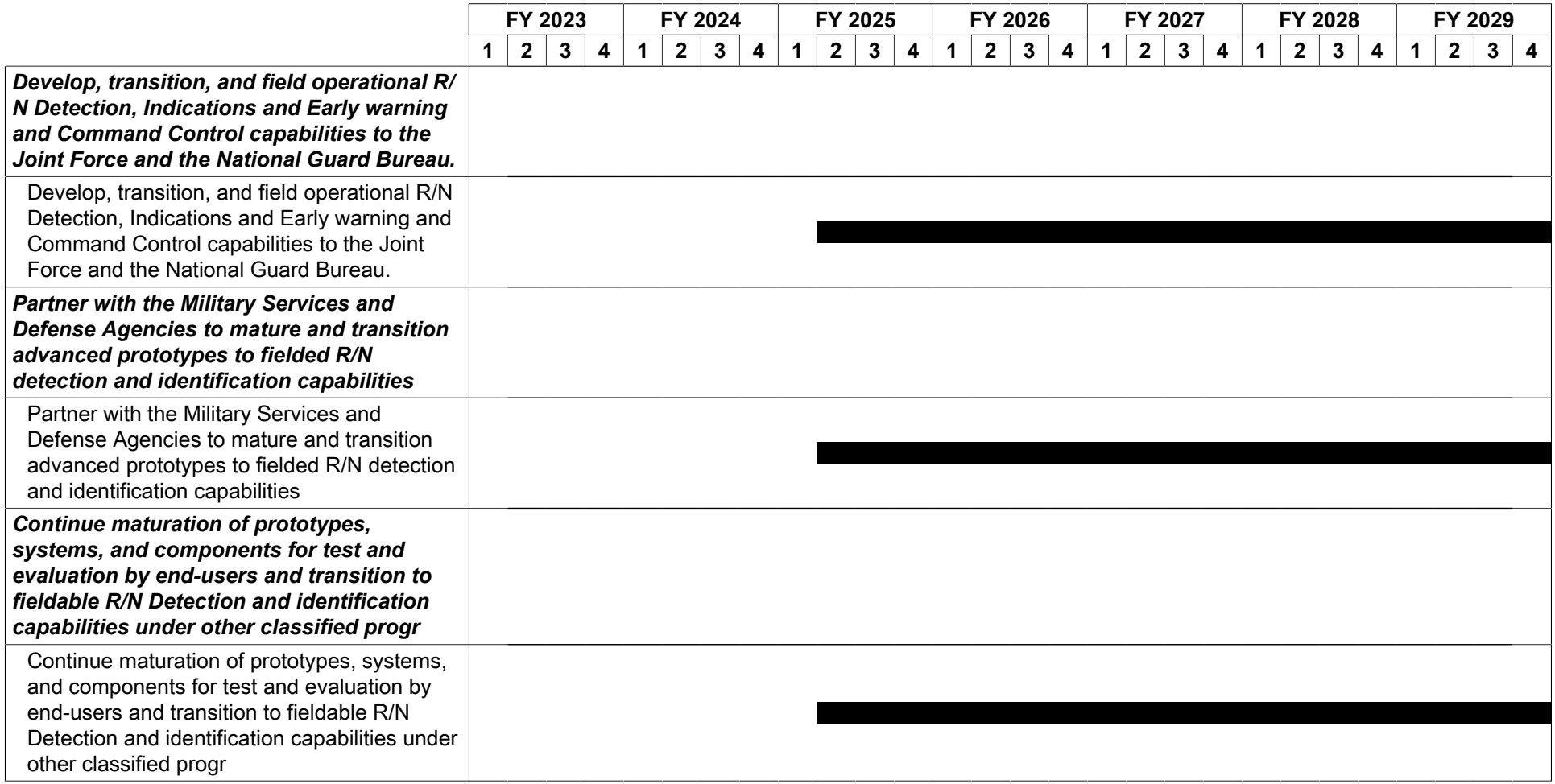


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605755D8Z / *Radiological and Nuclear Defense Modernization System Dev/Demo*	**Project (Number/Name)** 778 / *Radiological and Nuclear Defense Mod Sys Dev/Demo*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Develop, transition, and field operational R/N Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.				
Develop, transition, and field operational R/N Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.	2	2025	4	2029
Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities				
Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities	2	2025	4	2029
Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified progr				
Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified progr	2	2025	4	2029

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605772D8Z / *Nuclear Command Control and Communications (NC3)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	7.371	3.422	4.110	3.849	-	3.849	3.814	3.760	3.807	3.879	Continuing	Continuing
815: *Nuclear Command, Control and Communications (NC3)*	7.371	3.422	4.110	3.849	-	3.849	3.814	3.760	3.807	3.879	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Under Secretary of Defense for Acquisition and Sustainment roles as Principal Staff Assistant (PSA) for NC3 and NC3 Capability Portfolio Manager (CPM) as directed by the Secretary of Defense in the NC3 Governance Improvement (NGI) Implementation Plan and Department of Defense Directive 3730.02. The role of the NC3 PSA and NC3 CPM is to ensure alignment of NC3 acquisition, procurement, modernization, sustainment, interoperability and resources to deliver effective current and future NC3 capabilities, and proactively manage the NC3 portfolio to align NC3 programs with DoD nuclear weapons platform and delivery systems sustainment and modernization efforts.

The NC3 Portfolio consists of approximately 200 systems, platforms, networks, and applications. The goals of the CPM are to 1) assess NC3 modernization programs and their integration, synchronization, and contribution to the NC3 enterprise, 2) monitor the readiness of operational NC3 systems, 3) identify performance gaps and make recommendations on technology upgrades and prototyping to enable the future capabilities to outpace the threat, and 4) support data-driven portfolio management by developing the necessary tools and processes to assess and manage integrated programmatic and technical risks. This includes the analytical expertise, and information storage and retrieval systems to support the continuing development of CPM for managing the complex NC3 enterprise. These efforts will simultaneously support the Commander, U.S. Strategic Command (USSTRATCOM) as NC3 Enterprise Lead; NC3 Enterprise Center (NEC); systems engineering and architecture development entities; the Under Secretary of Defense for Research and Engineering (USD(R&E)), the Joint Staff, and the Services. This program supports the capability portfolio-based approach (DoD Directive 7045.02, “Capability Portfolio Management”).

This program funds development of new tools, technical assessments, and planning for the CPM to manage the NC3 enterprise. This includes:
1) developing analytical tools for improving NC3 enterprise-level management and programmatic and technical risk assessments;
2) supporting the office of primary responsibility for NC3 enterprise capability portfolio management, to include assessing current capability, complying with statutory mandates, and conducting NC3-related studies, analyses, and policy updates;
3) assessing DoD Component plans, programs, and budgets for adequacy and execution (including courses of action development and recommendations);
4) identifying, prototyping, evaluating, and recommending new technology for inclusion in the NC3 system; and
5) developing NC3 corrective action and risk mitigation plans to support the NC3 CPM investment recommendations to senior DoD leadership.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605772D8Z *I Nuclear Command Control and Communications (NC3)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	3.654	4.110	4.059	-	4.059
Current President's Budget	3.422	4.110	3.849	-	3.849
Total Adjustments	-0.232	0.000	-0.210	-	-0.210
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.098	-			
• SBIR/STTR Transfer	-0.134	-			
• Defense-Wide Topline Adjustment	-	-	-0.210	-	-0.210

Change Summary Explanation

FY 2025 decrease is due to internal Department program adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605772D8Z / *Nuclear Command Control and Communications (NC3)*	Project (Number/Name) 815 / *Nuclear Command, Control and Communications (NC3)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
815: *Nuclear Command, Control and Communications (NC3)*	7.371	3.422	4.110	3.849	-	3.849	3.814	3.760	3.807	3.879	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program supports development and operation of analytical tools to evaluate authoritative data (cost, schedule, performance, risk) on NC3 Portfolio programs to maximize portfolio alignment to strategic priorities and capabilities. It will create integrated development and delivery schedules for NC3 programs. These tools will forecast system/capability degradation as well as plans for capability replacement, improvement, or replacement in the context of the larger NC3 enterprise. It also provides the technical expertise to support risk management analysis (with an emphasis on system design, development and acquisition) of the NC3 enterprise and will develop strategies for synchronizing NC3 preplanned improvements. It will support the timely exchange of program and capability status information between elements of the NC3 enterprise, the OSD staff, and the combatant commands with a goal of increasing the use of electronic means to provide current and accurate information on key elements of the NC3 enterprise.

The effort will develop robust, integrated capability plans and schedules for NC3 capabilities to clarify system dependencies and identify disconnects. It will also support cross-department collaboration for development of enterprise-wide approaches for capability management. This includes: (1) vertical and horizontal integration activities within the Department and with the interagency where appropriate; (2) a coordinated portfolio-based approach to planning, programming, budgeting and execution; (3) reform efforts at the legislative, governance, policy, management and execution levels; 4) protection of information and technology that support or enables technology-based capability development for the NC3 warfighting domain and 5) supports the identification, evaluation, and incorporation of promising technology for inclusion in the NC3 system.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Nuclear Command, Control and Communications (NC3)	3.422	4.110	3.849
Description: FY 2023 Accomplishments: Conducted analysis and supported NC3 governance, oversight, and decision-making to include the Deputy Secretary of Defense chaired NC3 (July 2023), Under Secretary of Defense for Acquisition and Sustainment chaired NC3 Integrated Acquisition Portfolio Review (IAPR) (April 2023) and Council on Oversight of the National Leadership Command, Control, and Communications System (CONLC3S) (June 2022) and multiple NC3 Systems Engineering and Authorities (SEA) Boards with detailed programmatic cost, schedule, and performance analysis for senior executive decisions on resource allocations and strategic direction. Published DoD Directive S-3730.02, The Nuclear Command, Control and Communications Enterprise, the replacement to the Directive Type Memorandum (DTM) 19-005 (U) The Nuclear Command, Control and Communication Enterprise Governance,			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605772D8Z / *Nuclear Command Control and Communications (NC3)*	**Project (Number/Name)** 815 / *Nuclear Command, Control and Communications (NC3)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
outlining the NC3 enterprise governance construct and responsibilities. Updated the NC3 Portfolio Definition List of all NC3 systems and programs with a more accurate hierarchy of systems and better account for systems that overlap with other mission areas. The updated DoD Directive S-3730.02 and the PDL provided guidance to the nuclear enterprise on NC3 responsibilities and authorities and defined the NC3 portfolio more accurately. Refined quarterly analysis of the NC3 portfolio by implementing NC3 enterprise-level Integrated Master Schedule of more than 40 NC3 modernization programs and the legacy programs they replace to identify programmatic (cost, schedule, and performance) challenges and developed strategies to correct deficiencies and maintain critical path. Identified and analyzed under-resourced programs and secured an additional $1.4 billion for NC3 capabilities in the FY 2024 President's Budget. Developed a novel NC3 Tech Transition Framework approved by R&E and ASD(A) as a sophisticated tool for application to Mid-Tier Acquisition (MTA) policy, a framework for Competitive Acquisition Pathfinders (CAPs), and a tool to mitigate risks guiding technologies across the "valley of death" for the department. In the NC3 pilot, nine new concepts were examined to increase transition confidence and identify remaining maturation objectives for desired NC3 modernization and next gen capabilities. ***FY 2024 Plans:*** Conduct analysis and support the NC3 Enterprise Review Deputy Management Action Group, NC3 Integrated Acquisition Portfolio Reviews (IAPRs), the NC3 Systems Engineering and Authorities (SEA Board), and other Senior Leader NC3 meetings. Implement a strategy to protect critical information for NC3 next generation capabilities. Establish guidance and tools for program offices to comply with elevated security classification levels. Work with the National Security Agency to identify and certify new technical solutions (e.g. zero trust) for information protection across the NC3 research and development communities and the industrial base. ***FY 2025 Plans:*** Conduct analysis and support the NC3 Deputy Management Action Group, NC3 IAPR, National Leadership Command, Control, and Communications System (CONLC3S), the NC3 SEA Board, and other Senior Leader NC3 meetings. Develop secure and cost-effective alternatives in protecting the NC3 data (e.g., systems engineering, RDT&E, contracting, and acquisition) leveraging best practices by other government agencies (e.g., IC, Army, Air Force) in protecting their most sensitive data. Perform trade space analysis on potential COAs to guide the design and investment decisions. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605772D8Z / *Nuclear Command Control and Communications (NC3)*	**Project (Number/Name)** 815 / *Nuclear Command, Control and Communications (NC3)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 decrease is due to internal Department program adjustments.			
Accomplishments/Planned Programs Subtotals	3.422	4.110	3.849

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Utilize existing fixed-price and cost-plus contracts (where appropriate) to continue implementation of NC3 Capability Portfolio Management, provide technical expertise for NC3 system evaluation and strategic planning, and development of NC3 analytical tools.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0605772D8Z / *Nuclear Command Control and Communications (NC3)*	Project (Number/Name) 815 / *Nuclear Command, Control and Communications (NC3)*	

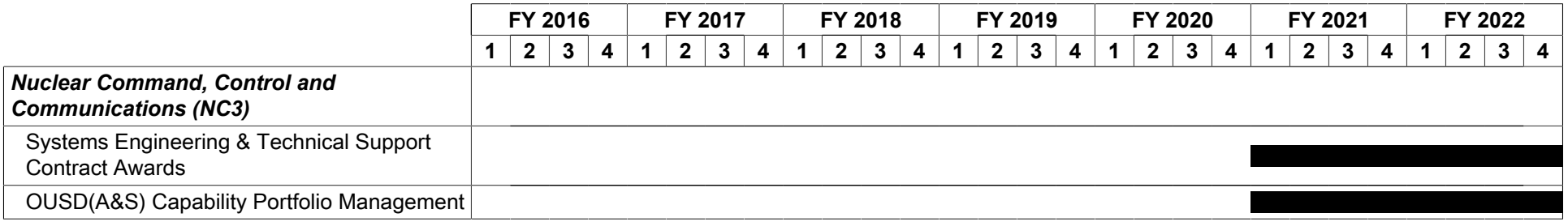
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NC3 Capability Portfolio Management	C/CPFF	OUSDA DASD SSIPM : Pentagon	7.371	3.422		4.110		3.849		-		3.849	Continuing	Continuing	-
		Subtotal	7.371	3.422		4.110		3.849		-		3.849	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.371	3.422		4.110		3.849		-		3.849	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605772D8Z / *Nuclear Command Control and Communications (NC3)*	**Project (Number/Name)** 815 / *Nuclear Command, Control and Communications (NC3)*



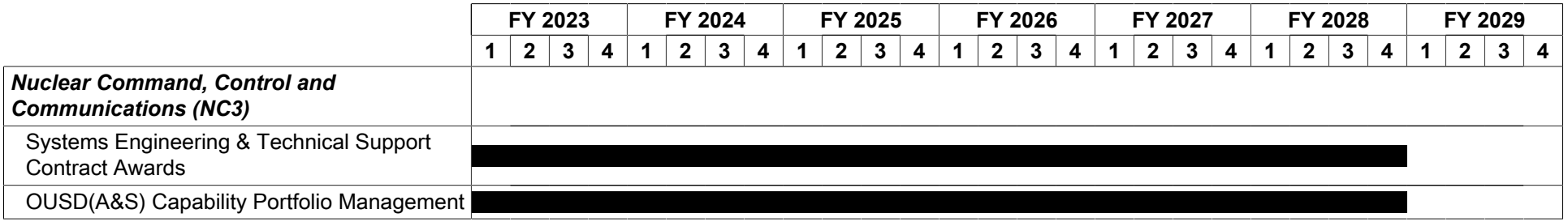


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0605772D8Z / *Nuclear Command Control and Communications (NC3)*	**Project (Number/Name)** 815 / *Nuclear Command, Control and Communications (NC3)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Nuclear Command, Control and Communications (NC3)				
Systems Engineering & Technical Support Contract Awards	1	2021	4	2028
OUSD(A&S) Capability Portfolio Management	1	2021	4	2028

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	23.740	7.663	8.159	7.152	-	7.152	7.131	7.085	7.181	7.319	-	-
305: *RP Information Management*	21.199	3.980	7.290	6.401	-	6.401	6.386	6.345	6.453	6.576	-	-
307: *RP Clearinghouse*	2.541	3.683	0.869	0.751	-	0.751	0.745	0.740	0.728	0.743	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This PE supports the National Defense Strategy (NDS) for 2023 to build a more lethal force through modernization of key capabilities, the NDS defense objective of establishing an unmatched twenty-first century National Security Innovation Base that effectively supports Department operations and sustains security and solvency, and the NDS strategic approach of reforming the Department's business practices by simultaneously increasing performance and affordability while still minimizing risk. Established in FY 2013, and tasked with supporting the Department's goals for audit readiness, energy efficiency, Real Property accountability, and to improve data quality and integration across the full spectrum of Sustainment business functions. DoD Real Property Information Management is used to maintain accurate and accessible data for all DoD real property assets. To manage this information we must conduct Business Process Re-engineering activities, developing and publishing data standards. Funding is also used to support the Assistant Secretary of Defense (ASD) Sustainment Senior Real Property Officer accountability requirements, such as, reconciliation of enterprise real property inventory records and development of asset management processes, business rules and associated data standards. A major component of this effort is fielding an enterprise Data Analytics and Integration Support (DAIS) platform coupled with an independent verification and validation capability, providing access to real time data through Web Services Description Language (WSDL) in support of timely, data-driven decision-making. The DAIS Portal also hosts a build out of data stores and portal requirements for Energy Resiliency and Conservation Investment Program (ERCIP) management as well as, the Construction Management Portal. A funding line was added to manage the RDT&E funding for the DoD Siting Clearinghouse. The program was stood up as a congressional requirement. This program is charged by statute to identify technical mitigation measures necessary to overcome degradation of radar from the proliferation of industrial wind turbine development. This research and development is necessary to work with Federally Funded Research and Development Centers (FFRDCs) to study potential technical improvements to radar.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	8.121	8.159	7.684	-	7.684
Current President's Budget	7.663	8.159	7.152	-	7.152
Total Adjustments	-0.458	0.000	-0.532	-	-0.532
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.161	-			
• SBIR/STTR Transfer	-0.297	-			
• Program Adjustments	-	-	-0.532	-	-0.532

Change Summary Explanation

FY 2025 funding decrease due to refined assessment of program requirements focused on Wind Turbine Radar Mitigation efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	Project (Number/Name) 305 / *RP Information Management*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
305: *RP Information Management*	21.199	3.980	7.290	6.401	-	6.401	6.386	6.345	6.453	6.576	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

The Real Property Inventory fulfills requirements of Executive Orders to achieve and maintain real property accountability and is a key component supporting both audit readiness and life-cycle asset management activities. This funding provides the department independent verification and validation needed to reconcile data errors, promoting improved data quality, and facilitating interoperability with Service systems to provide an enterprise view of asset management across the real property lifecycle from acquisition to disposal. Oversight and configuration management of business rules and standards are used to determine requirements, manage inventory records, and improve business processes. This initiative includes development and procurement of the enterprise data warehouse for integrating existing and future Sustainment systems and database needs. The required Real Property Unique Identifier (RPUID) process is included in this enterprise system.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Real Property Accountability	3.980	7.290	6.401
Description: The ASD for Energy, Installations, and Environment is the Senior Real Property Officer for the DoD, responsible for accountability and utilization of all DoD Real Property Assets. This funding provides the department an enterprise data warehouse coupled with an independent verification and validation capability. The DoD Real Property Accountability efforts are mandated by Executive Order and Public Law for improved reporting and utilization of federal real property, and to support data-driven decisions.			
FY 2024 Plans: Continue to support reconciliation and audit corrective action plan efforts by identifying errors/inconsistencies in Real Property inventory records, asset accountability and management processes, and business rules and associated data. Bring DAIS platform and WSDL implementation to IOC and complete links to ADVANA. Ensure improved data quality supporting multiple analyses and provide quality management mechanism for all of the DoD Real Property information. Continue to support radar studies as planned through the Wind Turbine Interference Mitigation Forum.			
FY 2025 Plans: Continue to support reconciliation and audit corrective action plan efforts by identifying errors/inconsistencies in Real Property inventory records, asset accountability and management processes, and business rules and associated data. Bring Real			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	**Project (Number/Name)** 305 / *RP Information Management*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Property Information Management (RPIM) platform and WSDL implementation to IOC and complete links to ADVANA. Ensure improved data quality supporting multiple analyses and provide quality management mechanism for all of the DoD Real Property information. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 decrease results from program adjustments to realign some resources to higher priority requirements.			
Accomplishments/Planned Programs Subtotals	3.980	7.290	6.401

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

Program utilizes Washington Headquarters Services Acquisition Directorate for EEIM contract support requirements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	**Project (Number/Name)** 305 / *RP Information Management*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EI&E Data Analytics & Integration Platform	C/FFP	FTC : Herndon VA	3.980	-		-		-		-		-	Continuing	Continuing	-
		Subtotal	3.980	-		-		-		-		-	Continuing	Continuing	N/A

Remarks

Operations, maintenance and continued development of reports and tools for DAIS are planned to be added as a task in the main BSI support contract in FY 2022. This is in support of our continued effort to reduce the number of contracts managed by DASD Real Property.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSI Support Contract Base Plus 4 Option Years	C/FFP	ANSER : Mark Center	13.078	2.880	Apr 2023	-		-		-		-	Continuing	Continuing	-
Defense Installation Spatial Data Infrastructure (DISDI) IGI&S Portal	MIPR	USACE : CRREL	1.398	1.100	Jul 2023	-		-		-		-	Continuing	Continuing	-
BSI Support Contract Re-compete (Base Plus 4)	C/FFP	TBD : Mark Center	2.743	-		2.800	May 2024	2.500	Apr 2025	-		2.500	Continuing	Continuing	-
Continue to support radar studies as planned through the Wind Turbine Interference Mitigation Forum.	FFRDC	TBD : TBD	-	-		4.490	Jun 2024	3.901	Jun 2025	-		3.901	Continuing	Continuing	-
		Subtotal	17.219	3.980		7.290		6.401		-		6.401	Continuing	Continuing	N/A

Remarks

DAIS support contract goes away in FY 2022 and BSI support contract will continue to support DAIS as an added task 14.

The DoD Siting Clearinghouse is charged by statute to identify technical mitigation measures necessary to overcome degradation of radar from the proliferation of industrial wind turbine development. This research and development is necessary to work with Federally Funded Research and Development Centers (FFRDCs) to study potential technical improvements to radar.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	Project (Number/Name) 305 / *RP Information Management*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.199	3.980		7.290		6.401		-		6.401	Continuing	Continuing	N/A

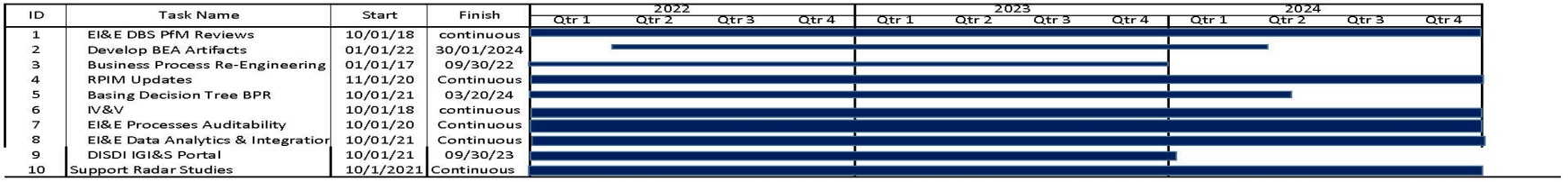
Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	**Project (Number/Name)** 305 / *RP Information Management*

ID	Task Name	Start	Finish
1	EI&E DBS PfM Reviews	10/01/18	continuous
2	Develop BEA Artifacts	01/01/22	30/01/2024
3	Business Process Re-Engineering	01/01/17	09/30/22
4	RPIM Updates	11/01/20	Continuous
5	Basing Decision Tree BPR	10/01/21	03/20/24
6	IV&V	10/01/18	continuous
7	EI&E Processes Auditability	10/01/20	Continuous
8	EI&E Data Analytics & Integration	10/01/21	Continuous
9	DISDI IGI&S Portal	10/01/21	09/30/23

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	**Project (Number/Name)** 305 / *RP Information Management*



ID	Task Name	Start	Finish
1	EI&E DBS PfM Reviews	10/01/18	continuous
2	Develop BEA Artifacts	01/01/22	30/01/2024
3	Business Process Re-Engineering	01/01/17	09/30/22
4	RPIM Updates	11/01/20	Continuous
5	Basing Decision Tree BPR	10/01/21	03/20/24
6	IV&V	10/01/18	continuous
7	EI&E Processes Auditability	10/01/20	Continuous
8	EI&E Data Analytics & Integration	10/01/21	Continuous
9	DISDI IGI&S Portal	10/01/21	09/30/23
10	Support Radar Studies	10/1/2021	Continuous

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	**Project (Number/Name)** 305 / *RP Information Management*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
PfM				
EI&E DBS PfM Reviews	1	2018	4	2024
Develop EI&E BEA Artifacts	2	2022	2	2024
Real Property BPRs	1	2017	4	2022
Real Property Asset Management				
RPIM Updates	1	2020	4	2024
Basing Moves Decision Tree BPR	1	2021	2	2024
IV&V	1	2018	1	2024
Real Property Process & System Auditability	1	2020	4	2024
Real Property Data Analytics & Integration	1	2021	4	2024
DISDI IGI&S Portal, Map, tools, and reports development and integration	1	2021	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	Project (Number/Name) 307 / *RP Clearinghouse*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
307: *RP Clearinghouse*	2.541	3.683	0.869	0.751	-	0.751	0.745	0.740	0.728	0.743	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The DoD Siting Clearinghouse is charged by statute to identify technical mitigation measures necessary to overcome degradation of radar from the proliferation of industrial wind turbine development. This research and development is necessary to work with Federally Funded Research and Development Centers (FFRDCs) to study potential technical improvements to radar.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: RP Clearinghouse	3.683	0.869	0.751
Description: The DoD Siting Clearinghouse works with FFRDCs to identify technical mitigation measures necessary to overcome degradation of radar from the proliferation of industrial wind turbine development. This research and development is necessary to study potential technical improvements to radar. ***FY 2024 Plans:*** Continue to support radar studies as planned through the Wind Turbine Interference Mitigation Forum. ***FY 2025 Plans:*** The Military Aviation and Installation Assurance Siting Clearinghouse program is charged by statute (Title 10, Section 183a) to identify technical mitigation measures necessary to overcome degradation of radar from the proliferation of industrial wind turbine development. FY 2025 funding will be used to refine technical solutions to mitigate the adverse effects of wind turbines on military radar and to develop solutions that work with industry and DoD. Research, development and testing will be done primarily through work with Federally Funded Research and Development Centers (FFRDCs) and universities. Results from the X studies anticipated to be funded in FY 2024 will applied to the FY 2025 research effort which will consist of X research efforts at Y FFRDCs and Z universities. All results are shared within various wind turbine industrial and academic forums. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 decrease results from program adjustments to realign some resources to higher priority requirements.			
Accomplishments/Planned Programs Subtotals	3.683	0.869	0.751

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	**Project (Number/Name)** 307 / *RP Clearinghouse*

C. Other Program Funding Summary ($ in Millions)

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	Project (Number/Name) 307 / *RP Clearinghouse*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DISDI Portal	C/FFP	USACE Contracted Vendor : USACE	0.005	-		-		-		-		-	Continuing	Continuing	-
		Subtotal	0.005	-		-		-		-		-	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Platform Resilience Mission Assurance (PRMA)	MIPR	ARMAMENT RDEC : BLDG 91 4TH AVE, PICATINNY ARSENAL NJ 07806-5000	0.536	-		0.869	Jun 2024	-		-		-	Continuing	Continuing	-
Continue to support radar studies as planned through the Wind Turbine Interference Mitigation Forum.	FFRDC	TBD : TBD	2.000	3.683	Aug 2023	-		0.751	Aug 2025	-		0.751	Continuing	Continuing	N/A
		Subtotal	2.536	3.683		0.869		0.751		-		0.751	Continuing	Continuing	N/A

Remarks

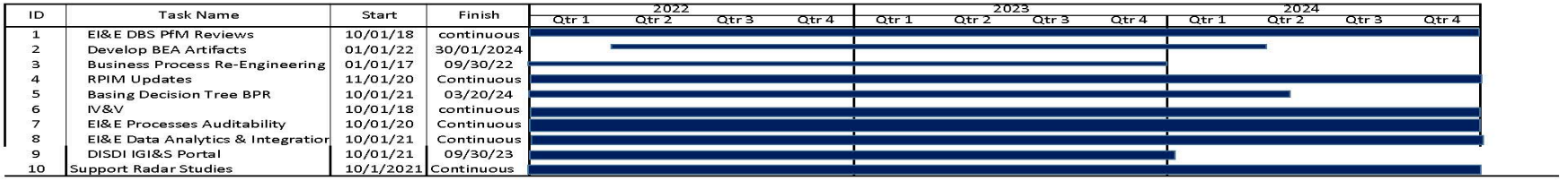
NA

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.541	3.683		0.869		0.751		-		0.751	Continuing	Continuing	N/A

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	**Project (Number/Name)** 307 / *RP Clearinghouse*



ID	Task Name	Start	Finish
1	EI&E DBS PfM Reviews	10/01/18	continuous
2	Develop BEA Artifacts	01/01/22	30/01/2024
3	Business Process Re-Engineering	01/01/17	09/30/22
4	RPIM Updates	11/01/20	Continuous
5	Basing Decision Tree BPR	10/01/21	03/20/24
6	IV&V	10/01/18	continuous
7	EI&E Processes Auditability	10/01/20	Continuous
8	EI&E Data Analytics & Integration	10/01/21	Continuous
9	DISDI IGI&S Portal	10/01/21	09/30/23
10	Support Radar Studies	10/1/2021	Continuous

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305304D8Z / *DoD Enterprise Energy Information Management (EEIM)*	**Project (Number/Name)** 307 / *RP Clearinghouse*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
RP Siting Clearinghouse				
Develop FY 2021 Program	1	2020	3	2020
FY 2021 Studies Evaluations	1	2021	4	2021
Develop FY 2022 Program	1	2021	4	2021
FY 2022 Studies Evaluations	1	2022	4	2022
Develop FY 2023 Program	1	2022	4	2022
FY 2023 Studies Evaluations	1	2023	2	2023
Develop FY 2024 Program	1	2024	4	2024
FY 2024 Studies Evaluations	1	2024	4	2024

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0305310D8Z / *Counterproliferation Advanced Development*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	75.588	14.839	14.471	13.151	-	13.151	14.620	16.256	16.540	16.849	-	-
813: */ Counterproliferation Advanced Development*	75.588	14.839	14.471	13.151	-	13.151	14.620	16.256	16.540	16.849	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence, and Build Sustainable and Long-Term Advantage.

The Counterproliferation Advanced Development (formerly, Countering Weapons of Mass Destruction (CWMD) Systems) research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: "improving our understanding of the operational environment – including in the information domain; sowing doubt among competitors that they would be able to achieve their objectives and conduct unattributed coercive actions; disrupting competitor actions that would afford them warfighting advantages; reinforcing our own warfighting advantages; and enhancing our interoperability and access to address acute forms of coercion." (2022 National Defense Strategy)

RDAs provide enhanced offensive counterproliferation capabilities. The Counterproliferation Advanced Development portfolio enables DoD to prevent adversary development, acquisition, transfer, deployment, and use of weapons of mass destruction. Likewise, the portfolio's investments deliver capabilities to "take action against actors of concern and reduce access to WMD development pathways" and, "delays further development, degrades capabilities where possible, and, if necessary, prevents WMD use". (2023 DoD Strategy to Counter Weapons of Mass Destruction)

The Counterproliferation Advanced Development portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices. These LOEs create unique options across the continuum of conflict, including exquisite tactical situational awareness, the ability to rapidly generate options, low visibility methods of maneuver, and the capability to employ immediate effects without diminishing future capabilities. These LOEs enable active campaigning to support Integrated Deterrence that mitigate risk to mission and risk to force.

The Office of the Secretary of Defense uses the Counterproliferation Advanced Development portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment strategy is used to meet emergent operational and capability needs validated by the Joint Force, yielding new fielded capabilities within one to two years.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0305310D8Z / *Counterproliferation Advanced Development*

The Counterproliferation Advanced Development program invests in maturation of prototypes; integration of technologies, systems, and components; developmental and operational test and evaluation; and transition to fielded capabilities that counter WMD proliferation. This program accelerates and enables transition of mature technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry.

This program funds labor, materials, and travel to support the requirements of this program, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including Research, Development, Test & Evaluation (RDT&E), assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	16.048	14.471	14.425	-	14.425
Current President's Budget	14.839	14.471	13.151	-	13.151
Total Adjustments	-1.209	0.000	-1.274	-	-1.274
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.621	-			
• SBIR/STTR Transfer	-0.588	-			
• Defense-Wide Topline Adjustment	-	-	-1.274	-	-1.274

Change Summary Explanation

The FY 2024 to FY 2025 funding decrease represents program adjustments directed by OUSD(A&S) to align with higher priority National Defense Strategy requirements and will result in 1-2 fewer new counter WMD capabilities delivered to the Joint Force.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0305310D8Z / *Counterproliferation Advanced Development*				Project (Number/Name) 813 / / *Counterproliferation Advanced Development*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
813: */ Counterproliferation Advanced Development*	75.588	14.839	14.471	13.151	-	13.151	14.620	16.256	16.540	16.849	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence, and Build Sustainable and Long-Term Advantage.

The Counterproliferation Advanced Development (formerly, Countering Weapons of Mass Destruction (CWMD) Systems) research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: "improving our understanding of the operational environment – including in the information domain; sowing doubt among competitors that they would be able to achieve their objectives and conduct unattributed coercive actions; disrupting competitor actions that would afford them warfighting advantages; reinforcing our own warfighting advantages; and enhancing our interoperability and access to address acute forms of coercion." (2022 National Defense Strategy)

RDAs provide enhanced offensive counterproliferation capabilities. The Counterproliferation Advanced Development portfolio enables DoD to prevent adversary development, acquisition, transfer, deployment, and use of weapons of mass destruction. Likewise, the portfolio's investments deliver capabilities to "take action against actors of concern and reduce access to WMD development pathways" and, "delays further development, degrades capabilities where possible, and, if necessary, prevents WMD use". (2023 DoD Strategy to Counter Weapons of Mass Destruction)

The Counterproliferation Advanced Development portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices. These LOEs create unique options across the continuum of conflict, including exquisite tactical situational awareness, the ability to rapidly generate options, low visibility methods of maneuver, and the capability to employ immediate effects without diminishing future capabilities. These LOEs enable active campaigning to support Integrated Deterrence that mitigate risk to mission and risk to force.

The Office of the Secretary of Defense uses the Counterproliferation Advanced Development portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment strategy is used to meet emergent operational and capability needs validated by the Joint Force, yielding new fielded capabilities within one to two years.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305310D8Z / *Counterproliferation Advanced Development*	**Project (Number/Name)** 813 / / *Counterproliferation Advanced Development*

The Counterproliferation Advanced Development program invests in maturation of prototypes; integration of technologies, systems, and components; developmental and operational test and evaluation; and transition to fielded capabilities that counter WMD proliferation. This program accelerates and enables transition of mature technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry.

This program funds labor, materials, and travel to support the requirements of this program, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including Research, Development, Test & Evaluation (RDT&E), assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: P*813 / Counterproliferation Advanced Development	14.839	14.471	13.151
Description: The CWMD Systems: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to fielded capabilities that counter Weapons of Mass Destruction (WMD) proliferation. Significant Science and Technology (S&T) investments in prototype development by the Department of Defense, other Federal agencies, and industry are leveraged, capitalizing on mature technologies to accelerate and enable transition to fielded capabilities. Resulting fielded capabilities illuminate WMD networks; exploit vulnerabilities in networks, programs, facilities, and weapons systems; and disable or defeat WMD and their delivery systems. ***FY 2024 Plans:*** FY 2024 Plans: • Transitioned multiple classified capabilities to operations and sustainment on behalf of specialized units within USSOCOM; • Transitioned multiple classified capabilities to operations and sustainment on behalf of geographic Combatant Commands and the Services; • Transitioned multiple classified capabilities to operations and sustainment that support operational preparation of the environment on behalf of the broader DoD CWMD Enterprise; • Transitioned additional capabilities that support CWMD operational decision-making on behalf of DoD and the USG. ***FY 2025 Plans:*** FY 2025 Plans: • Transition multiple classified capabilities to operations and sustainment on behalf of specialized units within USSOCOM; • Transition multiple classified capabilities to operations and sustainment on behalf of geographic Combatant Commands and the Services; • Transition multiple classified capabilities to operations and sustainment that support operational preparation of the environment on behalf of the broader DoD CWMD Enterprise; • Transition additional capabilities that support CWMD operational decision-making on behalf of DoD and the USG;			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305310D8Z / *Counterproliferation Advanced Development*	**Project (Number/Name)** 813 / *Counterproliferation Advanced Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable CWMD capabilities under other classified projects. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 funding decrease represents program adjustments directed by OUSD(A&S) to align with higher priority National Defense Strategy requirements and will result in 1-2 fewer new counter WMD capabilities delivered to the Joint Force.			
Accomplishments/Planned Programs Subtotals	14.839	14.471	13.151

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

The Office of the Deputy Assistant Secretary of Defense for Threat Reduction and Arms Control (ODASD(TRAC)) establishes annual priorities based on national and the DoD strategies and senior leader guidance. Based on those priorities, TRAC solicits project proposals from Combatant Commands, Military Services, and Defense Agencies, and interagency partners. To be selected, a proposed project must have a validated requirement, an engaged requirement champion, a viable acquisition strategy, and a qualified program management office. A technology project must identify its starting and desired end-state Technology Readiness Level. Likewise, the end-user for any proposed project must demonstrate a long-term plan for acceptance and sustainment of a fieldable capability. Project period of performance is typically 12-24 months.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305310D8Z / *Counterproliferation Advanced Development*	**Project (Number/Name)** 813 / *Counterproliferation Advanced Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop and transition fieldable CWMD & Counterproliferation capabilities to US Special Operations Command and its components	MIPR	USSOCOM : TBD	32.858	7.909	Jan 2023	7.708	Jan 2024	7.009	Jan 2025	-		7.009	-	-	N/A
Partner with the Services to develop advanced prototypes and fielded CWMD & Counterproliferation Advanced Development capabilities.	MIPR	TBD : TBD	12.684	2.359	Jan 2023	2.302	Jan 2024	2.091	Jan 2025	-		2.091	-	-	N/A
Develop and transition fieldable CWMD & Counterproliferation capabilities to Geographic Combatant Commands and their components	MIPR	TBD : TBD	13.419	2.389	Jan 2023	2.446	Jan 2024	2.117	Jan 2025	-		2.117	-	-	N/A
Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable capabilities of other classified projects.	MIPR	TBD : TBD	16.627	2.182	Jan 2023	2.015	Jan 2024	1.934	Jan 2025	-		1.934	-	-	N/A
		Subtotal	75.588	14.839		14.471		13.151		-		13.151	-	-	N/A

Remarks

N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	75.588	14.839		14.471		13.151		-		13.151	-	-	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0305310D8Z / *Counterproliferation Advanced Development*	Project (Number/Name) 813 / *Counterproliferation Advanced Development*	

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305310D8Z / *Counterproliferation Advanced Development*	**Project (Number/Name)** 813 / / *Counterproliferation Advanced Development*

Counterproliferation Advanced Development
BA 5 / PE 0305310D8Z

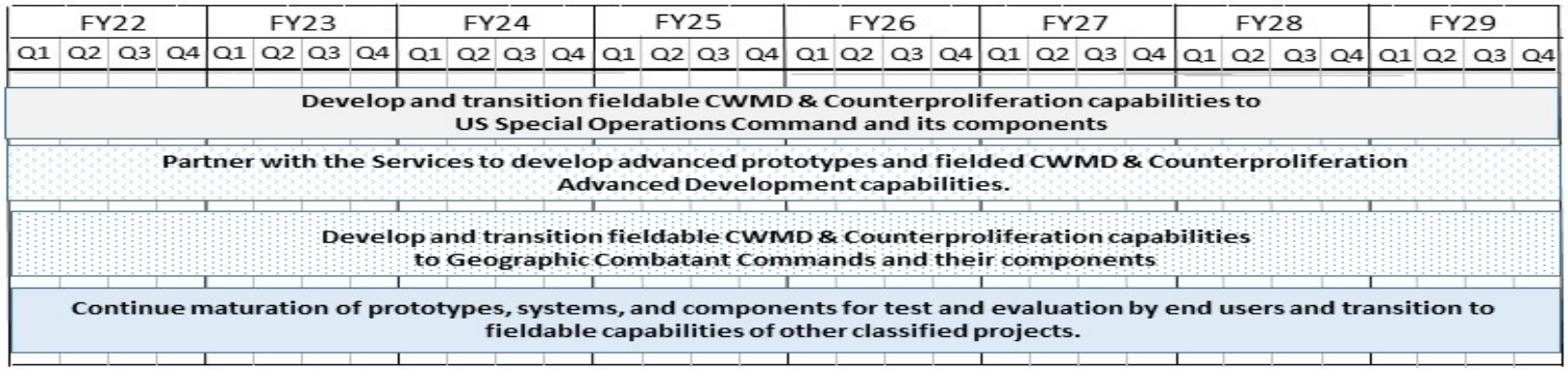


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0305310D8Z / *Counterproliferation Advanced Development*	**Project (Number/Name)** 813 / / *Counterproliferation Advanced Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Develop and transition fieldable Countering Weapons of Mass Destruction (CWMD) and Counterproliferation capabilities to US Special Operations Command and its components				
Develop and transition fieldable CWMD & Counterproliferation capabilities to US Special Operations Command and its components	1	2024	4	2025
Partner with the Services to develop advanced prototypes and fielded CWMD and Counterproliferation capabilities.				
Partner with the Services to develop advanced prototypes and fielded CWMD and Counterproliferation capabilities.	1	2024	4	2025
Develop and transition fieldable CWMD & Counterproliferation Advanced Development capabilities to Geographic Combatant Commands and their components.				
Develop and transition fieldable CWMD & Counterproliferation Advanced Development capabilities to Geographic Combatant Commands and their components.	1	2024	4	2025
Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable capabilities of other classified projects.				
Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable capabilities of other classified projects.	1	2024	4	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Preparedness Against Weapons Of Mass Destruction*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	3.770	-	-	-	-	-	-	-	Continuing	Continuing
784: *Domestic Prepare Against WMD*	0.000	0.000	3.770	-	-	-	-	-	-	-	Continuing	Continuing

Note

New Start (Y/N): No

Following FY 2024 the PE name "Domestic Prepare Against WMD" changed to "Radiological and Nuclear Defense Modernization System Development and Demonstration" and the PE number changed from 0505167D8Z to 0605755D8Z to more accurately reflect the prescribed purpose of the Program Element.

A. Mission Description and Budget Item Justification

As a FY 2024 new start, this program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence, and Build Sustainable and Long-Term Advantage.

The Radiological and Nuclear (Rad/Nuc) Detection Gear Modernization and Procurement for the Joint Force research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: improving our capability to operate in the Radiological and Nuclear environment – including in the information and early warning domain; reinforcing our own warfighting advantages by providing increased capability to detect and identify radiological and nuclear threats; and enhancing our interoperability and access to address acute forms of coercion. This program is specifically geared to provide improved rad/nuc detection, indications and identification capability to the warfighter and to upgrade obsolete equipment (2022 National Defense Strategy).

RDAs provide enhanced Rad/Nuc capabilities. The Domestic Prepare against WMD portfolio enables DoD to provide Joint force and National Guard capability development for radiological and nuclear (R/N) capability development, acquisition and modernization funding to prepare for or to respond to any emergency involving nuclear, and radiological events in the United States; will ensure DoD strategic direction aligns with the National Defense Strategy's priority for Homeland Defense; is a necessary action in the Homeland to improve resilience; and promotes integrated deterrence of WMD with state, local and other federal agencies.

The Domestic Prepare against WMD portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices.

The Office of the Secretary of Defense uses the Domestic Prepare against WMD portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment strategy is used to meet emergent operational, and capability needs validated by the Joint Force and the National Guard Bureau, yielding new fielded capabilities within one to two years.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0505167D8Z *I Domestic Preparedness Against Weapons Of Mass Destruction*

The Domestic Prepare against WMD portfolio: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to fielded capabilities that improve capability to detect and identify radiological and nuclear threats. This program bridges the gap between basic research to accelerate and enable transition of technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry.

This program funds labor, materials, and travel to support the requirements of this program, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	3.770	0.000	-	0.000
Current President's Budget	0.000	3.770	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

Following FY 2024 the PE name "Domestic Prepare Against WMD" changed to "Radiological and Nuclear Defense Modernization System Development and Demonstration" and the PE number changed from 0505167D8Z to 0605755D8Z to more accurately reflect the prescribed purpose of the Program Element.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0505167D8Z / *Domestic Preparedness Against Weapons Of Mass Destruction*				Project (Number/Name) 784 / *Domestic Prepare Against WMD*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
784: *Domestic Prepare Against WMD*	0.000	0.000	3.770	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Following FY 2024 the PE name "Domestic Prepare Against WMD" changed to "Radiological and Nuclear Defense Modernization System Development and Demonstration" and the PE number changed from 0505167D8Z to 0605755D8Z to more accurately reflect the prescribed purpose of the Program Element.

A. Mission Description and Budget Item Justification

As a FY 2024 new start, this program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence, and Build Sustainable and Long-Term Advantage.

The Radiological and Nuclear (Rad/Nuc) Detection Gear Modernization and Procurement for the Joint Force research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: improving our capability to operate in the Radiological and Nuclear environment – including in the information and early warning domain; reinforcing our own warfighting advantages by providing increased capability to detect and identify radiological and nuclear threats; and enhancing our interoperability and access to address acute forms of coercion. This program is specifically geared to provide improved rad/nuc detection and identification capability to the warfighter and to upgrade obsolete equipment (2022 National Defense Strategy).

RDAs provide enhanced Rad/Nuc capabilities. The Domestic Prepare against WMD portfolio enables DoD to provide Joint force and National Guard capability development for radiological and nuclear (R/N) capability development, acquisition and modernization funding to prepare for or to respond to any emergency involving nuclear, and radiological events in the United States; will ensure DoD strategic direction aligns with the National Defense Strategy's priority for Homeland Defense; is a necessary action in the Homeland to improve resilience; and promotes integrated deterrence of WMD with state, local and other federal agencies.

The Domestic Prepare against WMD portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices.

The Office of the Secretary of Defense uses the Domestic Prepare against WMD portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment strategy is used to meet emergent operational, and capability needs validated by the Joint Force and the National Guard Bureau, yielding new fielded capabilities within one to two years.

The Domestic Prepare against WMD portfolio: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to fielded capabilities that improve capability to detect and identify

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Preparedness Against Weapons Of Mass Destruction*	**Project (Number/Name)** 784 / *Domestic Prepare Against WMD*

radiological and nuclear threats. This program bridges the gap between basic research to accelerate and enable transition of technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry.

This program funds labor, materials, and travel to support the requirements of this program, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Domestic Prepare Against WMD	-	3.770	-
Description: The Domestic Prepare Against WMD: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to Rad/Nuc Defense fielded capabilities. Significant S&T investments in prototype development by the Department of Defense, other Federal agencies, and industry are leveraged, capitalizing on mature technologies to accelerate and enable transition to fielded capabilities. Resulting fielded capabilities protect the warfighter, support indications and early warning, command and control, defend vulnerabilities in networks, programs, facilities, and weapons systems; and enable the disablement or defeat of WMD and their delivery systems. ***FY 2024 Plans:*** • Developed, transitioned, and fielded operational Rad/Nuc Detection, Identification, Early warning, and Command Control capabilities to the Joint Force and the National Guard Bureau. • Partnered with the Military Services and Defense Agencies to mature and transitioned advanced prototypes to fielded rad/nuc detection and identification capabilities. • Continued maturation of prototypes, systems, and components for test and evaluation by end-users and transitioned to fieldable rad/Nuc Detection and identification capabilities under other classified projects. • Continued development of Joint Incident Site Communications Capability Architecture for the National Guard CBRN Response Enterprise. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Following FY 2024 the PE name "Domestic Prepare Against WMD" changed to "Radiological and Nuclear Defense Modernization System Development and Demonstration" and the PE number changed from 0505167D8Z to 0605755D8Z to more accurately reflect the prescribed purpose of the Program Element.			
Accomplishments/Planned Programs Subtotals	-	3.770	-

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Preparedness Against Weapons Of Mass Destruction*	**Project (Number/Name)** 784 / *Domestic Prepare Against WMD*

C. Other Program Funding Summary ($ in Millions)

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0505167D8Z / *Domestic Preparedness Against Weapons Of Mass Destruction*	Project (Number/Name) 784 / *Domestic Prepare Against WMD*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
• Develop, transition, and field operational Rad/Nuc Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.	C/TBD	TBD : TBD	-	-		1.280	Apr 2024	-		-		-	Continuing	Continuing	-
• Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded rad/nuc detection and identification capabilities.	C/TBD	TBD : TBD	-	-		1.280	Apr 2024	-		-		-	Continuing	Continuing	-
• Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable rad/Nuc Detection and identification capabilities under other classified p	C/TBD	TBD : TBD	-	-		1.210	Apr 2024	-		-		-	Continuing	Continuing	-
		Subtotal	-	-		3.770		-		-		-	Continuing	Continuing	N/A

Remarks

Following FY 2024 the PE name "Domestic Prepare Against WMD" changed to "Radiological and Nuclear Defense Modernization System Development and Demonstration" and the PE number changed from 0505167D8Z to 0605755D8Z to more accurately reflect the prescribed purpose of the Program Element.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		3.770		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Preparedness Against Weapons Of Mass Destruction*	**Project (Number/Name)** 784 / *Domestic Prepare Against WMD*

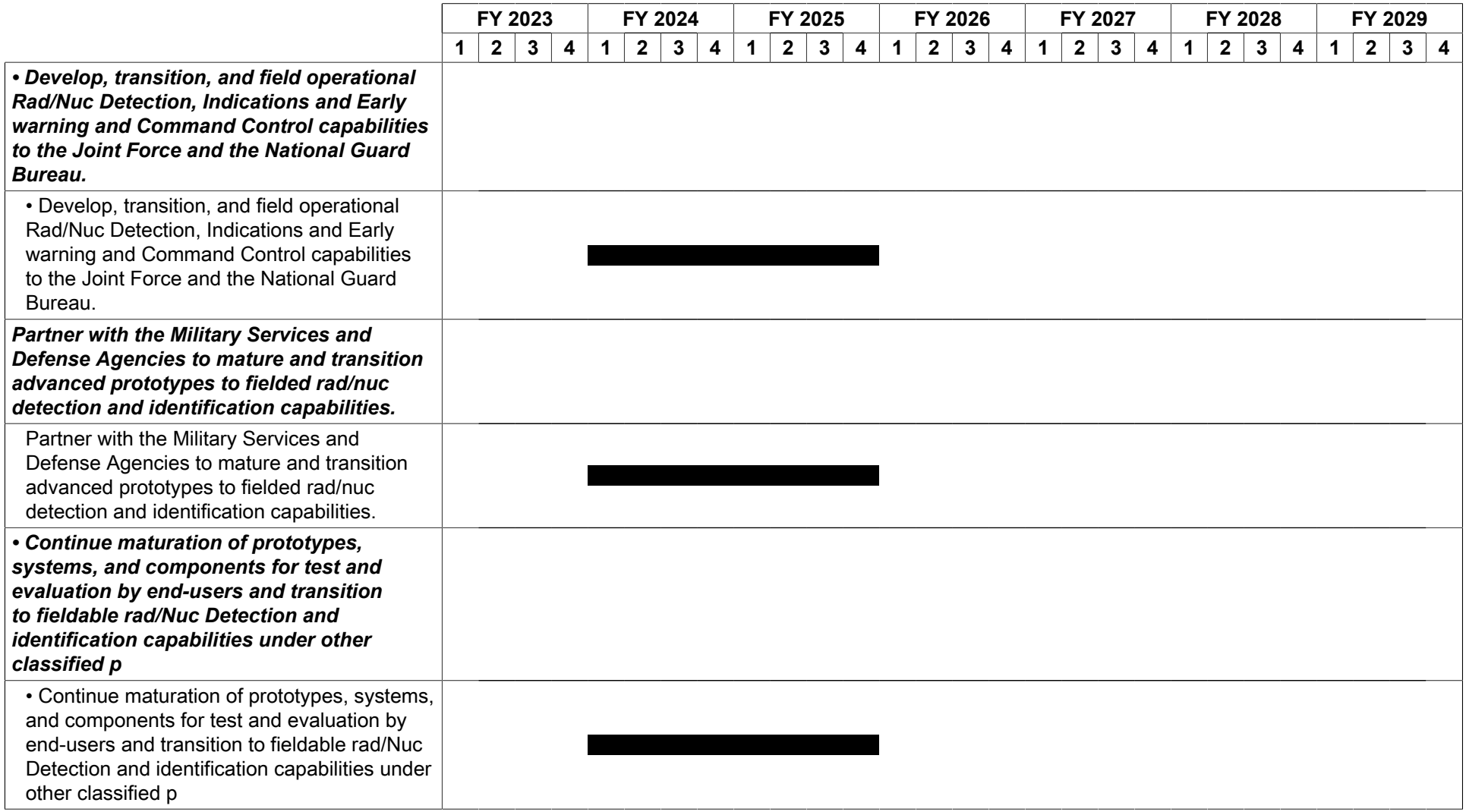

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Preparedness Against Weapons Of Mass Destruction*	**Project (Number/Name)** 784 / *Domestic Prepare Against WMD*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
• Develop, transition, and field operational Rad/Nuc Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.				
• Develop, transition, and field operational Rad/Nuc Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.	1	2024	4	2025
Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded rad/nuc detection and identification capabilities.				
Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded rad/nuc detection and identification capabilities.	1	2024	4	2025
• Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable rad/Nuc Detection and identification capabilities under other classified p				
• Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable rad/Nuc Detection and identification capabilities under other classified p	1	2024	4	2025

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604122D8Z / *JADC2 Development and Experimentation Activities*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	222.945	-	222.945	232.704	199.870	204.579	209.084	Continuing	Continuing
085: *JADC2*	0.000	0.000	0.000	222.945	-	222.945	232.704	199.870	204.579	209.084	Continuing	Continuing

Note

New Start (Y/N): No

Beginning in FY 2025 Joint All-Domain Command & Control (JADC2)-related funding was re-aligned from PE 0604123D8Z to this PE in support of Congressional guidance.

A. Mission Description and Budget Item Justification

Beginning in FY 2025 Joint All-Domain Command & Control (JADC2) related funding was re-aligned from PE 0604123D8Z to this PE in support of Congressional guidance. The Chief Digital and Artificial Intelligence Officer (CDAO) supports the Department's initiatives to support decision advantage across the Joint Force and Combatant Command leadership. The CDAO JADC2 directorate is responsible for improving global accessibility and interoperability of warfighting data aligned to prioritized mission threads from the Joint Warfighting Concept.

JADC2 has the following projects:

1. Joint Operating Systems (JOS)
- Initial Data Integration Layer of software tools to access
- Edge software deployment to U.S. Pacific Fleet classified network
- Development of time-sensitive targeting application
- Prototype Data Integration Layer
- Provide improved access, security, and automated interfaces
- Supporting Joint Fires Network (JFN) with Common Data Layer
- Supporting transition of Assault Breaker II capabilities

2. Data Integration Layer (DIL):
- Ingest: Identify data needs, develop data ingest and mature data producer capability as needed
- Process, Transform, and Move: Develop data transformation and data routing services and support cross-domain data delivery
- Share and Distribute: Identify and prioritize data consumer integrations, develop data export services, validate 3rd party APIs, and induction systems

3. Global Information Dominance Experiment (GIDE): The JADC2 projects in CDAO are developing resilient enterprise data services to accelerate adoption of modern JADC2 mission command applications, driven through globally integrated experimentation events, GIDE. The GIDE is to iteratively improve warfighting processes and increase connectivity of digital systems. The GIDE series provides globally integrated, cross-CCMD, and strategic-to-operational execution of JADC2 with focused venue

for warfighters to design future capabilities with data-centric software tools. GIDE provides rapid iteration at-scale allowing the CDAO to test the effectiveness of the Data Integration Layer (DIL) while the Joint Staff and CCMDs test the effectiveness of evolving C2 concepts and capabilities. The GIDE experimentation campaign will continue its instrumentation to capture metrics and baseline performance across the Joint Force and measure interoperability and accuracy.

4. Mission Command Applications (MCAs): Develops software tools that digitized battle management C2 warfighting functions and serve as the primary interaction with the DIL and the data services it provided. This effort include aggregated required software licenses at CCMDs to manage government data rights, improve utilization, and encourage enterprise commonality.
- Consolidating individual contracts into an ""enterprise"" model of software licensing to improve efficiency, standardize pricing, and ensure commonality across global users
- Expanding software capabilities to additional combatant commands
- Accelerating delivery of advanced AI/ML capabilities
- Enabling creation of a software development pipeline

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	222.945	-	222.945
Total Adjustments	0.000	0.000	222.945	-	222.945
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Realignment from PE 0604123D8Z	-	0.000	222.945	-	222.945

Change Summary Explanation

Beginning in FY 2025 Joint All-Domain Command & Control (JADC2)-related funding was re-aligned from PE 0604123D8Z to this PE in support of Congressional guidance.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0604122D8Z / *JADC2 Development and Experimentation Activities*	Project (Number/Name) 085 / *JADC2*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
085: *JADC2*	0.000	0.000	0.000	222.945	-	222.945	232.704	199.870	204.579	209.084	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Beginning in FY 2025 Joint All-Domain Command & Control (JADC2)-related funding was re-aligned from PE 0604123D8Z to this PE in support of Congressional guidance.

A. Mission Description and Budget Item Justification

Beginning in FY 2025 Joint All-Domain Command & Control (JADC2)-related funding was re-aligned from PE 0604123D8Z to this PE in support of Congressional guidance. Mission Description and Budget Item Justification: The Chief Digital and Artificial Intelligence Officer (CDAO) supports the Department's initiatives to support decision advantage across the Joint Force and Combatant Command leadership. The CDAO CJADC2 directorate is responsible for improving global accessibility and interoperability of warfighting data aligned to prioritized mission threads from the Joint Warfighting Concept.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: JADC2	0.000	-	222.945
Description: The Chief Digital and Artificial Intelligence Officer (CDAO) supports the Department's initiatives to support decision advantage across the Joint Force and Combatant Command leadership. The CDAO JADC2 directorate is responsible for improving global accessibility and interoperability of warfighting data aligned to prioritized mission threads from the Joint Warfighting Concept. ***FY 2025 Plans:*** JADC2 plans for the following projects in FY 2025: 1. Joint Operating Systems (JOS) - JOS Phase IV: JOS will enter the Production Phase. During Production Phase, JOS will be fielded to additional units across CCMDs to support GIDE events for Robust Joint Warfighting Data 2. Data Integration Layer (DIL): - Ingest: Identify data needs, develop data ingest and mature data producer capability as needed - Process, Transform, and Move: Develop data transformation and data routing services and support cross-domain data delivery - Share and Distribute: Identify and prioritize data consumer integrations, develop data export services, validate 3rd party APIs, and induction systems			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604122D8Z / *JADC2 Development and Experimentation Activities*	**Project (Number/Name)** 085 / *JADC2*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
3. Global Information Dominance Experiment (GIDE): The JADC2 projects in CDAO are developing resilient enterprise data services to accelerate adoption of modern JADC2 mission command applications, driven through globally integrated experimentation events, GIDE. The GIDE is to iteratively improve warfighting processes and increase connectivity of digital systems. The GIDE series provides globally integrated, cross-CCMD, and strategic-to-operational execution of JADC2 with focused venue for warfighters to design future capabilities with data-centric software tools. GIDE provides rapid iteration at-scale allowing the CDAO to test the effectiveness of the Data Integration Layer (DIL) while the Joint Staff and CCMDs test the effectiveness of evolving C2 concepts and capabilities. The GIDE experimentation campaign will continue its instrumentation to capture metrics and baseline performance across the Joint Force and measure interoperability and accuracy. The GIDE will continue its quarterly experiments with the CCMDs and services. 4. Mission Command Applications (MCAs): Develops software tools that digitized battle management C2 warfighting functions and serve as the primary interaction with the DIL and the data services it provided. This effort include aggregated required software licenses at CCMDs to manage government data rights, improve utilization, and encourage enterprise commonality. Continuing its work from previously, MCAs will: - consolidating individual contracts into an ""enterprise"" model of software licensing to improve efficiency, standardize pricing, and ensure commonality across global users - Expanding software capabilities to additional combatant commands - Accelerating delivery of advanced AI/ML capabilities - Enabling creation of a software development pipeline ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Beginning in FY 2025 Joint All-Domain Command & Control (JADC2)-related funding was re-aligned from PE 0604123D8Z to this PE in support of Congressional guidance.			
Accomplishments/Planned Programs Subtotals	0.000	-	222.945

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604774D8Z / *Defense Readiness Reporting System (DRRS)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	74.904	8.476	12.746	11.415	-	11.415	10.596	10.819	11.048	11.268	-	-
774: *Defense Readiness Reporting System (DRRS)*	74.904	8.476	12.746	11.415	-	11.415	10.596	10.819	11.048	11.268	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Take Care of People and Build Sustainable and Long-Term Advantage.

This funding supports the Defense Readiness Reporting System - Strategic (DRRS-S), the comprehensive readiness reporting system for the Department of Defense mandated under Title 10 U.S. Code. The system measures, in an objective, accurate, and timely manner, the capability of the armed forces to carry out the National Security Strategy prescribed by the President, as well as, the defense planning guidance provided by the Secretary of Defense, and the National Military Strategy prescribed by the Chairman of the Joint Chiefs of Staff. DRRS-S hosts information and applications used to support the Geographic and Functional Combatant Commanders, the Services, Combat Support Agencies, the Joint Staff and the Office of the Secretary of Defense.

DRRS-S is the evolution of readiness reporting to a more comprehensive system, better able to meet the Department's current and future readiness information challenges. Included in these challenges is the expansion in scope of the entities who can and do report readiness. Shifting from solely resource centric readiness reporting to a resource informed mission/capabilities based reporting system, oriented towards the National Military Strategy (NMS), makes substantially more complex demands on readiness reporting, but portrays a far more relevant and holistic picture of readiness. DRRS-S allows the Department to assess readiness globally based on the program's integrated ability to project and sustain a mix of constructed forces. Additionally, the challenges associated with sourcing and evaluating the readiness of our forces engaged in on-going real operations, mean that force managers need applications that will query the entire Department for suitable, available organizations to meet current needs. DRRS-S continues to incorporate more data and develop more capable functionality to meet the evolving needs of both the operational employers of the Force, but also those responsible for Force Generation.

The National Defense Authorization Act for FY 2019 revised Title 10 U.S. Code and provided the Department of Defense direction requiring growth in the DRRS-S program and identified the program's need to maintain the technical currency necessary to quickly meet future challenges associated with providing senior leaders with relevant and timely information. Such initiatives include implementing the complex data structures and visualization tools needed to operationalize the Global Force Management - Data Initiative, and reporting at lower organizational levels consistent with how Forces are employed.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604774D8Z / *Defense Readiness Reporting System (DRRS)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	8.476	12.746	11.415	-	11.415
Current President's Budget	8.476	12.746	11.415	-	11.415
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

FY 2024 to FY 2025 decrease supports the planned completion of the Army’s transition to DRRS-S,

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0604774D8Z / *Defense Readiness Reporting System (DRRS)*	Project (Number/Name) 774 / *Defense Readiness Reporting System (DRRS)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
774: *Defense Readiness Reporting System (DRRS)*	74.904	8.476	12.746	11.415	-	11.415	10.596	10.819	11.048	11.268	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding supports the Defense Readiness Reporting System - Strategic (DRRS-S), the comprehensive readiness reporting system for the Department of Defense mandated under Title 10 U.S. Code. The system measures, in an objective, accurate, and timely manner, the capability of the armed forces to carry out the National Security Strategy prescribed by the President, as well as the defense planning guidance provided by the Secretary of Defense, and the National Military Strategy prescribed by the Chairman of the Joint Chiefs of Staff. DRRS-S hosts information and applications used to support the Geographic and Functional Combatant Commanders, the Services, Combat Support Agencies, the Joint Staff and the Office of the Secretary of Defense.

DRRS-S is the evolution of readiness reporting to a more comprehensive system, better able to meet the Department's current and future readiness information challenges. Included in these challenges is the expansion in scope of the entities who can, and do report readiness. Shifting from solely resource centric readiness reporting, to a resource informed mission/capabilities based reporting system, oriented towards the National Military Strategy (NMS), makes substantially more complex demands on readiness reporting, but portrays a far more relevant and holistic picture of readiness. DRRS-S allows the Department to assess readiness globally based on the program's integrated ability to project and sustain a mix of constructed forces. Additionally, the challenges associated with sourcing and evaluating the readiness of our forces engaged in on-going real operations mean that force managers need applications that will query the entire Department for suitable, available organizations to meet current needs. DRRS-S continues to incorporate more data and develop more capable functionality to meet the evolving needs of both the operational employers of the Force, but also those responsible for Force Generation.

The National Defense Authorization Act for FY 2019 made revisions to Title 10 U.S. Code directing the Department of Defense to take actions which required growth in the DRRS-S program. The legislation identified the program's need to achieve and maintain the technical currency necessary to quickly meet future challenges associated with providing senior leaders with relevant and timely information. Such initiatives include implementing the complex data structures and visualization tools required to operationalize the Global Force Management - Data Initiative, and reporting at lower organizational levels consistent with how the Department's forces are employed.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense Readiness Reporting System	8.476	12.746	11.415
Description: The Defense Readiness Reporting System (DRRS) establishes a capabilities-based, adaptive, near real-time readiness information system for DoD. DRRS measures the readiness of military forces and supporting infrastructure to meet missions and goals assigned by the Secretary of Defense. The realization of DRRS required integrating a host of key technologies to achieve an information system that supports distributed, collaborative, and dynamic readiness reporting in addition			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604774D8Z / *Defense Readiness Reporting System (DRRS)*	**Project (Number/Name)** 774 / *Defense Readiness Reporting System (DRRS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
to continuous tool-based assessment. The primary technical goal was the creation of a highly reliable and securely integrated readiness data environment to leverage and extend current readiness information systems. DRRS contains readiness metrics and supporting data for forces and support organizations. ***FY 2024 Plans:*** • Integration into DRRS-S of data sources and the creation of new functionality necessary to support readiness reporting reform efforts. • Refinement of Service-specific input tools for improved performance within the DRRS application. • Continued enhancement of program architecture to make use of hosting technology advancements. • Incorporate new and enhanced functionality required by evolving readiness reporting needs. • Continued GFM DI integration and functionality development. • Replacement of vulnerable & legacy software components. • Realize overall system efficiencies and cost savings through partial system migration to the cloud environment. ***FY 2025 Plans:*** • Continue integration into DRRS-S of new data sources and the creation of new functionality necessary to support readiness reporting improvements, the capture strategic readiness metrics, and the functionality required by evolving DoD readiness reporting needs. • Refinement and consolidation of Service-specific input tools for improved performance within the DRRS-S application. • Continued GFM DI integration and functionality development. • Continue program migration to a cloud hosting environment, in concert with program architecture updates that will result in system efficiencies and future cost savings. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease supports the planned completion of the Army's transition to DRRS-S, previously impacted by a FY 2020/2021 reprogramming action that increased funding in FY 2024 and is returning to normal programming levels in FY 2026.			
Accomplishments/Planned Programs Subtotals	8.476	12.746	11.415

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604875D8Z / *Joint Systems Architecture Development*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	52.406	6.277	8.426	9.690	-	9.690	9.274	9.338	9.577	9.822	Continuing	Continuing
875: *Portfolio Systems Acquisition (PSA)*	37.502	3.867	4.744	6.347	-	6.347	6.184	6.270	6.458	6.645	Continuing	Continuing
220: *Electronic Warfare Executive Committee*	14.904	2.410	3.682	3.343	-	3.343	3.090	3.068	3.119	3.177	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Joint Systems Architecture Development (JSAD) program supports the National Defense Strategy (NDS) imperative to build enduring advantages and provide integrated deterrence, and NDS priorities of defending the homeland; deterring strategic attacks against the US and our allies; deterring aggression; and building a resilient joint force. The program is broken up into two focus areas: Portfolio Systems Acquisition, supporting air, land, sea, and undersea warfare programs and munitions; and Electronic Warfare Executive Committee (EW EXCOM), supporting the statutory responsibilities of the EXCOM.

All efforts within the Office of the Deputy Assistant Secretary of Defense (DASD) for Platform and Weapon Portfolio Management (PWPM) strive to deliver the warfighter the best equipment and systems, and to do so by performing top down, national security strategy-driven, capabilities-based planning by fully leveraging Department and acquisition reform initiatives.

Department of Defense (DoD) Instruction 5000.02 and Chairman of the Joint Chiefs of Staff Instruction 3170.01 promulgate capabilities-based requirements and acquisition processes. The JSAD program enables collaborative efforts to achieve these goals with a focus on Major Defense Acquisition Programs (MDAPs) and integrated acquisition portfolio management. These efforts entail integrated roadmaps to support acquisition investment decisions, and assessments of MDAPs and other linchpin acquisition efforts in a capability area context. Activities in the JSAD project are focused on three areas:(1) integrated acquisition portfolio analysis; (2) acquisition roadmaps; and (3) acquisition decision support. These efforts guide the development and fielding of integrated acquisition systems in order to achieve Joint mission capabilities across the operational domain to defend against any global threats.

The Department uses enterprise-wide approaches which include:(1) horizontal integration within the Department and unity of effort through greater interagency collaboration; (2) engaging in a coordinated and portfolio-based approach to planning, programming, budgeting and execution; and (3) significant reforms at the governance, management and execution levels. To accomplish this intent, there needs to be a focused goal and concerted emphasis on shifting from systems acquisition to portfolio systems acquisition.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604875D8Z *I Joint Systems Architecture Development*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	6.610	8.426	8.105	-	8.105
Current President's Budget	6.277	8.426	9.690	-	9.690
Total Adjustments	-0.333	0.000	1.585	-	1.585
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.091	-			
• SBIR/STTR Transfer	-0.242	-			
• Program Adjustments for Integrated Acquisition Portfolio Reviews	-	-	1.585	-	1.585

Change Summary Explanation

Increase in FY 2025 provides funding to enable the Office of Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S)) and the Assistant Secretary of Defense for Aquisition (ASD(A)) to meet the Deputy Secretary of Defense priorities in expanding and institutionalizing the Integrated Acquisition Portfolio Reviews (IAPR) and Competitive Acquisition Pathways.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0604875D8Z / *Joint Systems Architecture Development*	Project (Number/Name) 875 / *Portfolio Systems Acquisition (PSA)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
875: *Portfolio Systems Acquisition (PSA)*	37.502	3.867	4.744	6.347	-	6.347	6.184	6.270	6.458	6.645	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Portfolio Systems Acquisition supports air, land, sea, and undersea warfare programs and munitions with a focus on Major Defense Acquisition Programs (MDAPs) and integrated acquisition portfolio management. These efforts entail integrated roadmaps to support acquisition investment decisions, and assessments of MDAPs and other linchpin acquisition efforts in a capability area context. PSA funds provide support in the areas of (1) integrated acquisition portfolio analysis; (2) acquisition roadmaps; and (3) acquisition decision support. These efforts guide the development and fielding of integrated acquisition systems in order to achieve Joint mission capabilities across the operational domain to defend against any global threats.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Portfolio Systems Acquisition (PSA)	3.867	4.744	6.347
Description: FY 2023 Accomplishments: - Continued efforts to further develop Capability Portfolio Management practices. Led and completed 4 Integrated Area Portfolio Assessments (IAPRs) focused Air and Cruise Missile Defense of the Homeland, C-C5ISR&T, Cyber Hardening of Priority Defense Systems, and TACAIR 2.0. -Led Integrated Portfolio Reviews and DABs for Columbia Full Rate Production (FRP) and IBCS FRP ACAT-1D programs. - Conducted Mid-Tier Acquisition (MTA) Advisory Board reviews in support of M-SHORAD, IVAS, LRHW and PrSM systems. Developed/updated the following DoD Directives: Capability Portfolio Management, C-sUAS Governance, and Munitions Requirements Process (MRP)_Implementation Guide - Provided Senior Level recommendations in support of PB24 Budget Reviews by leading 3 Focus Areas (Kill Chain, Force Modernization 1, Kinetic and Non-Kinetic Weapons) consisting of 12 Program Review Teams (PRTs) - Led the National Armaments Director (NAD) Working Group in support of Ukraine in the Areas of Integrated Air Defense and Air to Ground Weapons. Provided expertise in acquisition, production and industrial based recommendations in support of Ukraine. - Provided Senior Level recommendations to the Ukraine Senior Integration Group established to evaluate Ukraine needs and source capability either through current stock or development of capability to address Russian aggression. Supported			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604875D8Z / *Joint Systems Architecture Development*	**Project (Number/Name)** 875 / *Portfolio Systems Acquisition (PSA)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
the development and implementation of 45 Presidential Drawdown Authority (PDA) packages ($24B) and 9 Ukraine Security Assistance Tranches ($62.9B). Also responsible for the review and approval of 15 Replenishment Tranches ($25.9B) in support of the U.S. - Provided Senior Level recommendation to Taiwan Senior Integration Group in support of $1B in Presidential Drawdown Authority (PDA) consisting of 2 PDA packages. - Lead for ASD(A) in support of Foreign Military Sales (FMS) Tiger Team established to evaluate timelines associated with timely execution of FMS process. ***FY 2024 Plans:*** - Continue efforts to further develop Capability Portfolio Management practices, including supporting Mission Engineering principles in an effort to make both practices more widespread in use through the Office of the Secretary of Defense, the Joint Staff, and the services. - Further develop portfolio management of programs falling within the Air, Ground, Maritime and Electromagnetic Warfare mission areas, to include application of mission engineering analysis of kill chains. - Continue to identify portfolio and program synergies, reduce duplication, and identify opportunities for cost savings. - Continue to provide technical expertise in support of warfare area portfolios. - Continue to assess progress of program management initiatives and continue support to a variety of certification and qualification standards activities. - Continue to update roadmaps and, where appropriate, generate new roadmaps to guide investments in critical areas (e.g., future vertical lift, unmanned systems, ground vehicles, weapons/munitions, and Integrated Air and Missile Defense (IAMD)). - Continue analytical support for the ground combat vehicle portfolio. - Continue analytical support for the naval warfare portfolio. - Continue analytical support for the munitions process, from requirements generation to demilitarization.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604875D8Z / *Joint Systems Architecture Development*	**Project (Number/Name)** 875 / *Portfolio Systems Acquisition (PSA)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Further implement Mission Engineering practices within A&S to evaluate warfighter priority mission areas with a rigorous, data-driven analytic process to determine how systems work together in an operationally relevant environment and identify ways to integrate technology and systems to provide affordable capability solutions for our warfighters. - Respond to Government Accountability Office inquiries. - Respond to DoD Inspector General inquiries. - Review Council on Foreign Investment in the United States cases. - Continue to reshape focus and drive solution-oriented outcomes and decisions in all senior-level leadership meetings for the F-35 program to include Executive Steering Groups and other information and decision forums. - Continue to collaborate and shape outcomes across all Programming and Budget Review activities such as Strategic Portfolio Reviews, Issue Teams, Competitive Area Studies. - Continue to provide support and participate, as needed, in the Joint Capabilities Integration and Development process, to include functional warfare working groups, Functional Capabilities Boards, Joint Capabilities Boards and Joint Requirements Oversight Council. - Continue to lead, participate in, and provide support to the Strategic Portfolio Reviews and assigned issue paper teams. - Continue to provide support to the Deputy's Management Action Group and shape outcomes through analytical efforts. - Continue to provide support to the Secretary’s Weekly Priority Review. - Continue to provide support to the 3 Star Programmer's meetings. ***FY 2025 Plans:*** - Continue efforts to further develop Capability Portfolio Management practices, including supporting Mission Engineering principles in an effort to make both practices more widespread in use through the Office of the Secretary of Defense, the Joint Staff, and the services.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604875D8Z / *Joint Systems Architecture Development*	**Project (Number/Name)** 875 / *Portfolio Systems Acquisition (PSA)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Further develop portfolio management of programs falling within the Air, Ground, and Maritime mission areas, to include application of mission engineering analysis of kill chains. - Continue to identify portfolio and program synergies, reduce duplication, and identify opportunities for cost savings. - Continue to provide technical expertise in support of warfare area portfolios. - Continue to assess progress of program management initiatives and continue support to a variety of certification and qualification standards activities. - Continue to update roadmaps and, where appropriate, generate new roadmaps to guide investments in critical areas (e.g., future vertical lift, unmanned systems, ground vehicles, weapons/munitions, and Integrated Air and Missile Defense (IAMD)). - Continue analytical support for the ground combat portfolio. - Continue analytical support for the naval warfare portfolio. - Continue analytical support for the air warfare portfolio. - Continue analytical support for acquisition efforts related to the air leg of the nuclear triad, such as strategic bomber modernization and nuclear command and control aircraft. - Continue analytical support for the munitions process, from requirements generation to demilitarization. - Further implement Integrated Acquisition Portfolio Management practices within A&S to evaluate how systems work together in an operationally relevant environment and identify ways to integrate technology and systems to provide affordable capability solutions for our warfighters. - Respond to Government Accountability Office inquiries. - Respond to DoD Inspector General inquiries. - Review Council on Foreign Investment in the United States cases.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604875D8Z / *Joint Systems Architecture Development*	**Project (Number/Name)** 875 / *Portfolio Systems Acquisition (PSA)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue to support senior leadership decisions through acquisition review meetings such as Defense Acquisition Boards, In Progress Reviews, and F-35 Executive Steering Groups and other information and decision forums. - Continue to collaborate and shape outcomes across all Programming and Budget Review activities such as Strategic Portfolio Reviews, Issue Teams, Competitive Area Studies. - Continue to provide acquisition expertise and insight, as needed, in the Joint Capabilities Integration and Development process, to include functional warfare working groups, Functional Capabilities Boards, Joint Capabilities Boards and Joint Requirements Oversight Council. - Continue to lead, participate in, and provide support to the Strategic Portfolio Reviews and Program Budget Review. - Continue to provide support to the Deputy's Management Action Group and shape outcomes through analytical efforts. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in FY 2025 provides funding to enable the USD(A&S) and OUSD (A) to meet the Deputy Secretary of Defense priorities in expanding and institutionalizing the Integrated Acquisition Portfolio Reviews (IAPR) and Competitive Acquisition Pathways.			
Accomplishments/Planned Programs Subtotals	3.867	4.744	6.347

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0604875D8Z / *Joint Systems Architecture Development*	Project (Number/Name) 220 / *Electronic Warfare Executive Committee*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
220: *Electronic Warfare Executive Committee*	14.904	2.410	3.682	3.343	-	3.343	3.090	3.068	3.119	3.177	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Electromagnetic Warfare (EW) Executive Committee (EXCOM) - co-chaired by the Under Secretary of Defense for Acquisition & Sustainment (USD(A&S)), and the Vice Chairman of the Joint Chiefs of Staff (VCJCS) - is tasked to provide senior oversight, coordination, budget/capability harmonization, and advice on EW matters to the Secretary of Defense, Deputy Secretary of Defense, and the Deputy's Management Action Group. This program provides technical analyses, technology assessments, capability and capability gap identification, intelligence and threat evaluations to inform DoD EW requirements, acquisition programs, and investment decisions. This program also advances EW needs in modeling, simulation, test, exercises, experimentation, and training.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Electronic Warfare Executive Committee	2.410	3.682	3.343
Description: FY 2023 Accomplishments: - Completed EW EXCOM analysis of EW Counter-C5ISR capabilities and Electromagnetic Spectrum Operations Operational Assessment. - Continued cross-Service collaboration on and demonstrations of EW materiel solutions in Army and Navy. - Continued mission analysis of Airborne Electromagnetic Attack capabilities to support EW missions, including Suppression of Enemy Air Defenses. - Completed DoD Directed Energy (DE) capabilities analysis and DoD DE management processes review. - Continued to develop international partnerships in EW capabilities with key allies, including Australia and the UK. - Continued to analyze Department EW capability gaps to inform future DoD EW investment in programs and systems.			
FY 2024 Plans: - Continue mission engineering analyses and integration to incorporate soft kill and Electromagnetic Warfare effects and weapon systems in critical mission thread areas in order to meet evolving threats.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604875D8Z / *Joint Systems Architecture Development*	**Project (Number/Name)** 220 / *Electronic Warfare Executive Committee*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue to develop plans and conduct DOTMLPF-P initiatives to implement the Department's EW strategy. - Continue to perform the necessary analytic underpinning to develop and field advanced EW capabilities, including EW manning, training, exercises, modeling and simulation. - Continue to identify opportunities for Cross-Service EW collaboration, including EW research and development, acquisition programs, multi-purpose hardware and software, and other initiatives to increase EW investment efficiencies and promote interoperability. ***FY 2025 Plans:*** FY 2025 Plans: - Continue mission engineering analyses and integration to incorporate Electromagnetic Warfare effects and capabilities in critical mission thread areas in order to meet evolving threats. - Continue to develop plans and conduct DOTMLPF-P initiatives to advance the Department's EW capabilities strategy. - Continue to perform the necessary analytic underpinning to develop and field advanced EW capabilities, including EW manning, training, exercises, modeling and simulation. - Continue to identify opportunities for Cross-Service EW collaboration, including EW research and development, acquisition programs, multi-purpose hardware and software, and other initiatives to increase EW investment efficiencies and promote interoperability. -Update operational requirements and develop options for Airborne Electromagnetic Attack material solutions to meet the threat. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease is due to internal Department program realignments.			
Accomplishments/Planned Programs Subtotals	2.410	3.682	3.343

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604875D8Z / *Joint Systems Architecture Development*	**Project (Number/Name)** 220 / *Electronic Warfare Executive Committee*

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	3,417.255	1,258.077	833.792	782.643	-	782.643	545.731	453.740	462.820	472.075	-	-
940: *Central Test and Evaluation Investment Program (CTEIP)*	3,417.255	1,258.077	833.792	782.643	-	782.643	545.731	453.740	462.820	472.075	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to defend the homeland, deter strategic attacks and aggression while prevailing in conflict, building enduring advantage, and building a resilient Joint Force and defense ecosystem. Since its inception in FY 1990, Central Test and Evaluation Investment Program (CTEIP) provides the development of the most needed, high-priority Test and Evaluation (T&E) capabilities for joint/multi-Service requirements. CTEIP investments address strategic requirements related to Hypersonics, Directed Energy, Cyber, Electronic Warfare, Nuclear Effects, Space, Autonomy, and Multi-Domain Operations. Other Investments in test infrastructure align with objectives in the Strategic Plan for DoD T&E Resources for high priority test needs and common range Infrastructure. The CTEIP uses a corporate investment approach to combine T&E needs from Service, Defense, and other Government agencies in order to maximize opportunities for joint efforts and avoid unwarranted duplication of test capabilities. CTEIP evaluates and selects for execution, proposals that align to the NDS and USD(R&E) priorities, provide the greatest return on investment, make efficient use of limited test resources, leverage Service investment, and promote joint solutions to fill test capability gaps. CTEIP provides enterprise solutions that benefit the whole Department. These investments are needed so test capabilities keep pace with U.S. and adversary technical advances as well as, with quickly changing threats.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	1,267.535	833.792	788.960	-	788.960
Current President's Budget	1,258.077	833.792	782.643	-	782.643
Total Adjustments	-9.458	0.000	-6.317	-	-6.317
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.313	-			
• Below Threshold Reduction	-7.014	-	-	-	-
• Cancelled Accounts	-0.131	-	-	-	-
• Program Adjustments	-	-	-6.317	-	-6.317

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604940D8Z *I Central Test and Evaluation Investment Program (CTEIP)*

Congressional Add Details ($ in Millions, and Includes General Reductions)

	FY 2023	FY 2024
Project: 940: *Central Test and Evaluation Investment Program (CTEIP)*		
Congressional Add: *Central Test and Evaluation Investment Development (CTEIP)*	448.577	-
Congressional Add Subtotals for Project: 940	448.577	-
Congressional Add Totals for all Projects	448.577	-

Change Summary Explanation

Changes in FY 2023 are the result of SBIR/STTR, cancelled accounts, and a Below Threshold Reduction.

FY 2025 - A reduction of $6.317 was applied to meet DoD overall funding reductions, which was spread to mitigate impact. $7.890 was the topline reduction and an inflation adjustment of +$1.573.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*	Project (Number/Name) 940 / *Central Test and Evaluation Investment Program (CTEIP)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
940: *Central Test and Evaluation Investment Program (CTEIP)*	3,417.255	1,258.077	833.792	782.643	-	782.643	545.731	453.740	462.820	472.075	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Central Test and Evaluation Investment Program (CTEIP) develops needed, high-priority Test and Evaluation (T&E) capabilities for joint/multi-Service requirements. CTEIP efforts include Hypersonics, Directed Energy, Cyber, Electronic Warfare, Nuclear Effects, Space, Autonomy and Multi-Domain Operations. Other Investments in test infrastructure align with objectives in the Strategic Plan for DoD T&E Resources for high priority test needs and common range Infrastructure.

The CTEIP uses a corporate investment approach to combine T&E needs from Service, Defense, and other Government agencies in order to maximize opportunities for joint efforts and avoid unwarranted duplication of test capabilities. CTEIP evaluates and selects for execution, proposals that align to the NDS and USD(R&E) priorities, provide the greatest return on investment, make efficient use of limited test resources, leverage Service investment; and promote joint solutions to fill test capability gaps. CTEIP provides enterprise solutions that benefit the Department as a whole.

The CTEIP provides needed T&E investments which align to USD(R&E) priorities and the Strategic Plan for DoD T&E Resources. These investments are needed so that test capabilities keep pace with U.S. and adversary technical advances as well as with quickly changing threats. The CTEIP includes special studies, analyses, project improvements, quick reaction efforts and strategic planning related to test capabilities and infrastructure. CTEIP investments increase efficiency and reduce the cost of testing on DoD's major ranges and test facilities. CTEIP continues to serve as the focal point for fostering common architectures throughout the test and training communities to enhance the sharing of resources and linkages between test and training ranges.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Central Test and Evaluation Investment Program	809.500	833.792	782.643
Description: -Develop autonomous systems test capability to provide digital robotic and autonomous systems integrated virtual environment for testing DoD autonomous ground vehicle systems and an open-air range environment capability to test full scale autonomous vehicles. -Develop autonomous teaming for a suite of capabilities furthering Unmanned Aircraft Systems (UAS) systems integration into controlled airspace and the test tools for integrating manned-unmanned teaming between ranges. Demonstration at Pax River, MD has been successful. Initial capabilities will be delivered to Naval Air Station Pax River, MD, Redstone Arsenal, AL and Edwards AFB, CA.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*	**Project (Number/Name)** 940 / *Central Test and Evaluation Investment Program (CTEIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-Develop counter Unmanned Aircraft Systems (cUAS) lethality diagnostics to provide a shielded enclosure for flight controllers, lethality and HPM diagnostics for cUAS operations. -Develop an open-air capability for creating a mission relevant RF test environment for testing cUAS systems at Naval Air Warfare Center (NAWCAD) Webster Field, MD. -Develop Naval autonomous systems test capabilities to establish a Modeling and Simulation (M&S) capability to test the performance of Naval surface ship autonomous systems software. -Develop advanced next-gen optical range tracking systems to increase performance, reduce costs and establish secure reliable optical tracking capability on DoD open-air ranges. -Develop short-wave infrared zoom capability to be mounted on multiple DoD tracking systems to track, determine effects phenomenology, and Time Space Positioning Information (TSPI) of aerial directed energy targets at night and in obscuration. -Vehicle real-time test instrumentation will reduce the size, weight and power for vehicle test data collection by replacing three unique data collectors with one modular, scalable data collector with increased storage capacity. This capability supported Abrams M1A2 System Enhancement Package (SEP) V3 and Bradley M2/M3A4 Follow on Test and Evaluation (FOT&E) and will support future vehicle tests. -A hybrid tracking system will develop a modular system of sensors to provide a range of capabilities for providing time, space position information, in Global Positioning System (GPS) denied environments, for aircraft and weapon testing. -Upgrade missile attitude instrument suite used to capture 6-DOF TSPI and validate RF and IR missile models, while meeting requirements associated with OCONUS transport and operation. -Implement littoral electromagnetic range will establish a secure, well-instrumented coastal test environment at Naval Information Warfare Center (NIWC), San Diego to validate emerging commercial and government electromagnetic systems and tactics. -A maritime tomahawk upgrade provides an additional telemetry frequency to Block V Tomahawk test assets enabling range safety control and telemetry in support of stream raid/simultaneous engagements.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*	**Project (Number/Name)** 940 / *Central Test and Evaluation Investment Program (CTEIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-Multi-spectral data collection develops a test capability for T&E of integrated multi-spectral threat warning receivers and infrared countermeasures against complex multi-spectral threats. This effort will field co-located Radio Frequency (RF) and Infra-red (IR) mobile threat simulators and a portable C2 node for realistic threat presentation to engage the System Under Test (SUT). -Develop open ocean weapons impact scoring system to provide persistent, relocatable range capability for beyond line of sight, high precision weapon scoring and range surveillance. -Directed Energy efforts include a high speed data recorder which develops a ruggedized, shielded, man-portable high-speed data recording system for High Power Microwave (HPM) directed energy testing; a radiometrically-device Instrument for Laser Evaluation develops a diagnostic system for confirming performance of current and future High Energy Laser (HEL) systems; a remote target sensor which develops a system capable of measuring HPM effects on internal components attacked by HPM systems; an S-Band threat source which develops a frequency agile S-band High Power Microwave threat source for Military Standard 464C vulnerability testing; a tethered HPM recorder and electronic attack target effort which accelerates development of instrumentation necessary for testing UAS vulnerabilities in an HPM threat environment; and a system placement analysis capability which upgrades existing capability to provide 3D outdoor effects test planning needed to support testing of Counter UAS HPM systems. -HPM capabilities being developed include a portable electronic field sensors to cover a wide area measurement system to characterize the HPM E-field and test blue HPM effectiveness against airborne threats; a Very High Frequency (VHF) threat simulator which develops a test source to support wideband VHF MIL STD 464C testing of a full-sized target such as an aircraft. -Closed loop Passive Electronic Scanned Array (PESA) simulator develops two transportable, closed-loop threat radar systems replicating the performance of a classified, widely fielded long-range surface-to-air missile system. -Direct injection of electro optical, infrared project will develop test capability in which Electro Optical/Infrared (EO/IR) imagery is directly injected into the systems' core computer via sensor emulators. -Provide an attack drone for Army T&E develops an electronic attack package for BQM-167 drone target that can target multiple radar systems under test (SUT)s at multiple frequency bands. -Develop Integrated Air Defense System (IADS) enhancements with networked threat emulation to provide a comprehensive threat-representative IADS capability at Electronic Combat Range, China Lake and other facilities providing four threat-representative Command Posts to existing Electronic Warfare (EW) capabilities.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*	**Project (Number/Name)** 940 / *Central Test and Evaluation Investment Program (CTEIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-Interactive Communication Navigation & Identification Radio Frequency (CNI RF) environment simulator will address Installed System Test Facility (ISTF) shortfalls in CNI RF testing on modern aircrafts by expanding upon current ISTF capability to provide an operationally relevant ground test environment. -An electronic warfare cyber techniques, effects and characteristics project development provides an RF and cyber effects test environment for Electromagnetic Maneuver Warfare. -Joint EW Digital Integrated Air Defense System (DIADS) integration effort upgrades DIADS M&S capacities to support expansion of EW testing across western test ranges. -Electronic warfare effort for open air battle shaping will establish an enterprise architecture and approach to implement multi-range aircraft instrumentation interoperability and network connectivity to meet test and training needs for air warfare missions. -Air-to-Ground radar environment will develop capabilities for testing high-density air-to-air, air-to-ground, and advanced signals in an ISTF environment. The radar environment simulator will provide digital RF memory devices that capture, store, delay, scale, and return radar signals to the radar under test. -A reconfigurable closed-loop threat simulator will provide a means for quickly evaluating single and multi-aircraft EA/EP effectiveness and survivability against a dense RF environment of emergent threat systems. Integrated closed loop radar simulators of modern threats are required to fully stress the SUTs in a threat representative environment. -Hypersonic test capability improvement to develop a clean air, variable Mach ground test capability for Developmental Test & Evaluation (DT&E) of full-scale hypersonic boost glide and scramjet weapon systems. -Develop a mid-pressure arc heaters to expand the DoD H2 Hypersonic Test Facility to provide higher enthalpy at the mid-pressure altitudes to enable ground testing of Prompt Global Strike, Maneuvering Reentry Vehicles, and SCRamJet components such as nose cones, fins, and other leading-edge surfaces. -Develop a next generation aeroshell test capability arc heater facility that increases DoD’s capacity to conduct aerothermal materials testing in support of hypersonic missiles, ballistic missiles, and other high altitude ballistic/maneuvering munitions. -Weather effects upgrades provide the current test track the ability to provide a small-scale rain and snow erosion test capability to validate vehicle structural design.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*	**Project (Number/Name)** 940 / *Central Test and Evaluation Investment Program (CTEIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-Develop 6 DoD vibration tables for HEL systems mounted on ships, ground vehicles, and aircraft. -Develop an improved sled track rockets that provides a new modular rocket propulsion system for the three DoD high speed test tracks including an improved capability to ground test full scale components at hypersonic speeds. -Provide a scoring system motion compensation table to develop a radar pedestal motion compensation mechanism and test and verification system to support weapon lethality testing in broad open ocean environments. -A Mach 7 test capability at the Arnold Engineering Development Center (AEDC) tunnel 9 will be returned to service to provide a full-scale aerothermal structural capability for seeker aperture development. -Modeling & Simulation (M&S) effort to support boost glide Thermal analysis software upgrades, provides a tool set for improving capabilities for predicting aerothermal and ablation response to high speed, high temperature flow in ground and flight test environments. -M&S enhancements for weather effects develops advanced material response models validated with ground test data to predict weather erosion in flight. -Implement non-ballistic radar tracking algorithms and the supporting infrastructure to track non-ballistic hypersonic vehicles for Reagan Test Site. -Reagan Test Site Kiernan Reentry Measurements Site Technology Refresh will refresh Kiernan Reentry Measurement System (KREMS) Radar hardware and software systems to increase system functionality and system capability. -Develop a multi-axle vehicle chassis simulator and a drive train simulator to test heavy 4 and 5 axle vehicle performance and reliability. -Provide upgraded and new Radar Cross Section (RCS) measurement capabilities to measure and evaluate advanced low observable technologies in increasingly complex and cluttered environments. -A scene projector effort will improve high fidelity, high temperature scene protectors for installed system and hardware in the loop laboratory testing of sensors and seekers for high speed weapons and missile engagements.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*	**Project (Number/Name)** 940 / *Central Test and Evaluation Investment Program (CTEIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-Develop a dense plasma focus capability to provide an ultra-short pulse simulation capability to test the vulnerability of missile components to very short, intense bursts of neutrons from a fusion-based nuclear weapon. -Fast burst reactor upgrade develops new high purity, high enriched uranium rings and safety blocks for the fast burst reactor at White Sands Missile Range, NM to conduct neutron vulnerability testing of missile and other components. -Heavy ion test facility upgrade for Single Event Effects (SEE) testing. A Single Event Effects (SEE) adds an additional SEE Beamline to increase capacity of testing natural space radiation. -Upgrade a survivability and vulnerability rarefaction waveform eliminator to provide an improved louver system for the large blast simulator to prevent debris hitting the test object. -Upgrade a survivability and vulnerability Xenon lamp facility to provide an improved control system and subsonic wind capability for this system. -Upgrade an X-Ray simulator for test of nuclear survivability and replaces three DoD X-ray simulators that measure the susceptibility of missile components to damage from high dose warm and cold x-rays experienced in space. -Develop an advanced communication threat testing uplink capability that provides EW threat representative uplink jamming system for T&E of satellite system responsiveness against threat systems. -Provide a maritime survivability library and threat M&S tool which evaluates the lethality of emerging anti-ship weapons, using artificial intelligence/machine learning techniques. -Multispectral target simulator and emitter upgrades modernize IR missile plume simulator emitters to meet current and future systems' fidelity requirements, as well as improve the simulators' availability and sustainability replacing obsolete equipment and augmenting the available standby emitters. -Provide a dual laser threat simulation capability to evaluate space-based Intelligence, Surveillance and Reconnaissance (ISR) sensors against surrogate ground and air based laser threats. -Develop a threat representative multi-modal global navigation satellite system jammer to provide denial and deception jamming of Position Navigation and Timing information during operational test and training.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*	**Project (Number/Name)** 940 / *Central Test and Evaluation Investment Program (CTEIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-Provide an airborne towed plume simulator that will provide an infrared threat missile plume-simulator to support rotary wing Aircraft Survivability. - Develop an avionics test bed providing a common framework to allow embedded avionics components to engage in an error-free state while component level cybersecurity T&E is performed. - Network system integration and test environment for Cyber Test Capabilities expands an existing application to include cyber capabilities to monitor, check for, alert on, identify messaging, and identify the source of the messaging that is modified, or indicates a modification “tip-off” capability. - Test tool for unencrypted datalinks develops a wideband RF Cybersecurity test tool for exploiting unencrypted Radio Frequency datalinks by capturing datalink information and generating RF messages in real time. ***FY 2024 Plans:*** -Continuing development and implementation of multiple threat-representative wideband radars to adequately test and assess our fifth-generation aircraft in a contested environment. -Continue development of nuclear environment chambers to test hardening our next generation of microelectronics for survivability against nuclear effects (neutrons, x-ray, gamma, etc.) on the battlefield, and accelerate the testing of microelectronics used in strategic systems and space systems. -Continue development and begin fielding of Flight Test Instrumentation and Terminal Area Scoring for broad ocean area precision scoring capabilities to test lethality and impact location of nuclear modernization systems (Ground Based Strategic Deterrent, Trident, etc.). -Continue to upgrade High Speed Test Track capabilities to realistically test end-game missile lethality (seeker, warhead detonation, intercept effectiveness, etc.) at DoD high speed test tracks which are located at Holloman, China Lake, and Eglin. -Continue to develop Secure Telemetry and High Bandwidth Data Processing thru improvement of cybersecurity and the acceleration of test analysis capability at numerous long-range missile test ranges to support faster acquisition of hypersonic and nuclear modernization systems.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*	**Project (Number/Name)** 940 / *Central Test and Evaluation Investment Program (CTEIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-Develop Test Capability to provide ground development and test capabilities to validate complex physics-based models and evaluate Hardware, Software, and emerging threats into severable capabilities that can be networked with the National Space Test and Training Complex (NSTTC). -Develop new physical carts and new antennas to represent threat environment with pulse-to-pulse full spectrum coverage and polarization Agility/Diversity/Stability, co-located threats / multi-radar threat systems, and beam width agility/diversity for dynamic change in SUT illumination and multi-beam threat at one location with representative power and improved test efficiency and effectiveness at the Benefield Anechoic Facility. -Capability to track, autonomously direct/point imagers, and measure multiple airborne objects simultaneously. Objects operate across a wide range of altitudes, approach azimuths, and airspeeds, and swarms of Small Unmanned Aircraft Systems (sUAS). -Capability to model high-fidelity air-to-air (A/A) targets and electronic attack environments at sufficient fidelity, in a repeatable lab environment, necessary to test advanced 5th and 6th generation aircraft radar A/A modes. -Refurbishing one of a kind full scale, subsonic wind tunnel to allow testing of future vertical lift capabilities at speeds consistent with planned designed criteria. -Develops large scale (high fidelity) supersonic/supersonic aerodynamic test capability by developing and integrating new capability into Arnold Engineering Development Center's 16S wind tunnel. -Develop capability for real-time Multispectral Sensor Scene Projection/Injection weapon system T&E and testing of advanced multispectral weapons in dense Anti-Access Aerial Denial (A2AD) environments. -Provide capabilities to fully test current and future landing gear, wheels, brake, and tire systems and components. The fully commissioned dynamometer test machine will be integrated into the Landing Gear Test Facility (LGTF) at Wright-Patterson AFB in Ohio. -Provide Ground Test Power and Thermal Loads for Advanced Engine Propulsion Systems T&E. Will develop: a capability for increased power extraction; a capability for increased thermal management system loads; and the needed capacity (threshold requirement of two altitude test cells) for T&E of competing engine development programs.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*	**Project (Number/Name)** 940 / *Central Test and Evaluation Investment Program (CTEIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-Provide capability to improve the quality and accuracy of an object's state vector by fusing radar and optical data in real-time for tracking fast moving, non-ballistic, low altitude targets.			
FY 2025 Plans: -Develop ground-based space test capability to validate complex physics-based models and evaluate hardware/software emulations of emerging threats in a distributed environment. -Develop complex RF emitters to provide pulse -to pulse full spectrum coverage and polarization representative of multi-radar threat systems at the Benefield Anechoic Facility. -Develop high-fidelity, low clutter tracking (TSPI) capability of small Radar Cross Section (RCS) vehicles to support CUAS and swarming sUAS testing. -Develop the capability to model high-fidelity air-to-air (A/A) targets and associated electronic attack environments in a repeatable lab environment to test advanced 5th and 6th generation aircraft radar A/A modes. -Restore a full-scale subsonic wind tunnel to allow testing of Future Vertical Lift platforms and other rotary wing aircraft. -Develop large scale (high fidelity) supersonic and hypersonic aerodynamic test capability at Arnold Engineering Development Center 16S wind tunnel to support NGAD and hypersonic weapon separation. -Develop real-time Multispectral Sensor Scene Projection/Injection capability to test multi-mode seekers and advanced multispectral weapons in dense A2AD environments. -Develop and upgrade capabilities at the Landing Gear Test Facility (LGTF) at Wright-Patterson AFB to fully test current and future landing gear systems. -Develop Advanced Engine Propulsion Systems test capability to evaluate higher thermal loads and power extraction driven by Next Generation Adaptive Propulsion (NGAP) systems.			
FY 2024 to FY 2025 Increase/Decrease Statement: Decrease from FY 2024 to FY 2025 is the due to the anticipated completion of several ongoing, high-cost projects. Included in these efforts are the fielding of EW open air threat emitters to represent dense, realistic threat environments, fast burst reactor			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*	**Project (Number/Name)** 940 / *Central Test and Evaluation Investment Program (CTEIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
nuclear effects upgrades to test strategic weapon systems, multiple directed energy (HEL and HPM) efforts to characterize blue and red system effects, and several ground-based hypersonic capabilities to test strategic weapons and blue hypersonic systems.			
Accomplishments/Planned Programs Subtotals	809.500	833.792	782.643

	FY 2023	FY 2024
Congressional Add: Central Test and Evaluation Investment Development (CTEIP) ***FY 2023 Accomplishments:*** Details are classified.	448.577	-
Congressional Adds Subtotals	448.577	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604942D8Z / *Assessments Evaluations*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	69.690	5.360	5.810	1.503	-	1.503	1.541	1.578	1.617	1.658	Continuing	Continuing
822: *Director, Special Programs (DSP)*	69.690	5.360	5.810	1.503	-	1.503	1.541	1.578	1.617	1.658	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(A&S)/DSP.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	4.607	5.810	5.802	-	5.802
Current President's Budget	5.360	5.810	1.503	-	1.503
Total Adjustments	0.753	0.000	-4.299	-	-4.299
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• DoD SAPCO Realignment to DA&M	-	-	-4.299	-	-4.299
• Program adjustment	0.753	-	-	-	-

Change Summary Explanation

FY 2025 decrease due to the stand up of the DoD SAPCO office and the associated funding moving to OUSD DA&M.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0604942D8Z / *Assessments Evaluations*				Project (Number/Name) 822 / *Director, Special Programs (DSP)*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
822: *Director, Special Programs (DSP)*	69.690	5.360	5.810	1.503	-	1.503	1.541	1.578	1.617	1.658	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Classified Program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Director, Special Program	5.360	5.810	1.503
Description: Detailed Information is Classified. ***FY 2024 Plans:*** Detailed Information is Classified. ***FY 2025 Plans:*** Detailed Information is Classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease due to the stand up of the DoD SAPCO office and the associated funding moving to OUSD DA&M.			
Accomplishments/Planned Programs Subtotals	5.360	5.810	1.503

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604944D8Z / *Assessments and Evaluations, DoD*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	4.253	-	4.253	4.142	4.075	4.107	4.180	Continuing	Continuing
548: *DoD Special Programs*	-	0.000	0.000	4.253	-	4.253	4.142	4.075	4.107	4.180	Continuing	Continuing

Note

New Start (Y/N): Yes

A. Mission Description and Budget Item Justification

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	4.253	-	4.253
Current President's Budget	0.000	0.000	4.253	-	4.253
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 548: *DoD Special Programs*		
Congressional Add: *none*	0.000	-
Congressional Add Subtotals for Project: 548	0.000	-
Congressional Add Totals for all Projects	0.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0604944D8Z / *Assessments and Evaluations, DoD*	Project (Number/Name) 548 / *DoD Special Programs*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
548: *DoD Special Programs*	-	0.000	0.000	4.253	-	4.253	4.142	4.075	4.107	4.180	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Classified Program

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: DoD Special Programs	0.000	-	4.253
Description: Detailed Information is Classified			
FY 2025 Plans: Detailed Information is Classified			
FY 2024 to FY 2025 Increase/Decrease Statement: FY 2025 funds were realigned from OUSD(A&S) to stand up the DoD SAPCO office.			
Accomplishments/Planned Programs Subtotals	0.000	-	4.253

	FY 2023	FY 2024
Congressional Add: none	0.000	-
FY 2023 Accomplishments: none		
Congressional Adds Subtotals	0.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605100D8Z / *Joint Mission Environment Test Capability (JMETC)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	580.405	188.696	187.421	209.008	-	209.008	212.399	193.876	197.757	201.714	-	-
087: *JMETC Distributed Test*	259.833	53.370	114.899	138.543	-	138.543	140.678	121.230	123.656	126.130	-	-
088: *JMETC National Cyber Range (NCR) Complex*	320.572	135.326	72.522	70.465	-	70.465	71.721	72.646	74.101	75.584	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to defend the homeland, deter strategic attacks and aggression while prevailing in conflict, building enduring advantage, and building a resilient Joint Force and defense ecosystem. The Joint Mission Environment Test Capability (JMETC) program provides a Department of Defense (DoD) enterprise-wide test capability to support system-to-system interoperability testing, mission-level environment testing, and cyber event operations, including cyber testing, cyber training, cyber experimentation, and cyber mission rehearsal. The JMETC program implements the infrastructure capabilities defined in the DoD “Testing in a Joint Environment Roadmap” to provide acquisition program managers a robust nation-wide capability to “test like we fight”. The JMETC program provides a persistent, distributed test and evaluation (T&E) capability that supports system development to measure and improve interoperability performance and cyber resiliency, which otherwise would not be readily available to Service/Component acquisition programs. The JMETC program is funded within the Research, Development, Test and Evaluation (RDT&E) Management Support Budget Activity because it provides test capability in support of RDT&E programs. By linking distributed facilities, as well as providing the necessary tools, services and subject matter expertise, the JMETC program allows acquisition programs to efficiently evaluate their warfighting capability in a realistic joint mission environment. The JMETC program has been aligned to advance the National Defense Strategy (NDS), to test the development of resilient, survivable, federated networks and information ecosystems from the tactical level up to strategic planning, as well as test and assess cyber defenses, building a more lethal force.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605100D8Z *I Joint Mission Environment Test Capability (JMETC)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	189.199	187.421	195.786	-	195.786
Current President's Budget	188.696	187.421	209.008	-	209.008
Total Adjustments	-0.503	0.000	13.222	-	13.222
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.483	-			
• Cancelled Accounts	-0.020	-	-	-	-
• Program Adjustments	-	-	13.222	-	13.222

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 088: *JMETC National Cyber Range (NCR) Complex*		
Congressional Add: *Data Management/Big Data Analytics*	60.000	-
Congressional Add: *Artiticial Intelligence Hub Infrastructure*	3.500	-
Congressional Add Subtotals for Project: 088	63.500	-
Congressional Add Totals for all Projects	63.500	-

Change Summary Explanation

Changes in FY 2023 are due to SBIR/STTR and Cancelled accounts adjustments.

FY 2025 - A reduction of $1.958 was applied to meet DoD overall funding reductions, which was spread to mitigate impact. +$14.760 was added for Kill Webs, JADC2 Development and Experimentation and an inflation adjustment of +$.420.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605100D8Z / *Joint Mission Environment Test Capability (JMETC)*	Project (Number/Name) 087 / *JMETC Distributed Test*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
087: *JMETC Distributed Test*	259.833	53.370	114.899	138.543	-	138.543	140.678	121.230	123.656	126.130	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Mission Environment Test Capability (JMETC) program provides a Department of Defense (DoD) enterprise-wide test capability to support system-to-system interoperability testing, mission-level environment testing, and cyber event operations, including cyber testing, cyber training, cyber experimentation, and cyber mission rehearsal. The JMETC program implements the infrastructure capabilities defined in the DoD "Testing in a Joint Environment Roadmap" to provide acquisition program managers a robust nation-wide capability to "test like we fight". The JMETC program provides a persistent, distributed test and evaluation (T&E) capability that supports system development to measure and improve interoperability performance and cyber resiliency, which otherwise would not be readily available to Service/Component acquisition programs. The JMETC program is funded within the Research, Development, Test and Evaluation (RDT&E) Management Support Budget Activity because it provides test capability in support of RDT&E programs. By linking distributed facilities, as well as providing the necessary tools, services and subject matter expertise, the JMETC program allows acquisition programs to efficiently evaluate their warfighting capability in a realistic joint mission environment. The JMETC Program has been aligned to advance the National Defense Strategy (NDS), to test the development of resilient, survivable, federated networks and information ecosystems from the tactical level up to strategic planning, as well as test and assess cyber defenses, building a more lethal force.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: JMETC Distributed Test	53.370	114.899	138.543
Description: The JMETC Distributed Test project continued expansion of the JMETC Secret Network (JSN) infrastructure to meet requirements. The JMETC Distributed Test project supported DoD distributed test and training events to include: system interoperability certification; system interoperability assessments; command and control systems; air and missile defense; 4th and 5th Generation Aircraft; unmanned aircraft; precision-guided bombs; munitions; missile tracking and guidance; infrared countermeasures; Joint Fires; Joint Close Air Support; and coalition exercises. The JMETC Distributed Test project provided test planning support to users and organizations to conduct interoperability testing on numerous DoD systems including: command and control systems; information warfare; air and missile defense; intelligence, surveillance, and sensor systems; surface ships; anti-surface warfare; anti-submarine warfare; tactical radar systems; precision-guided bombs; unmanned aircraft; autonomous aircraft; manned fixed wing aircraft; helicopters; and enterprise information systems. The JMETC Distributed Test project assisted customers with the use of distributed test tools and troubleshooting of the end-to-end network infrastructures. In addition, the JMETC team provided on-site support for the execution of large-scale, complex distributed events.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605100D8Z / *Joint Mission Environment Test Capability (JMETC)*	**Project (Number/Name)** 087 / *JMETC Distributed Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The JMETC Distributed Test project continued to develop and demonstrate Knowledge Management and Big Data Analytics tools and technologies, in support of JMETC customer needs and requirements. The JMETC Distributed Test project demonstrated a common data analytics framework (CHEETAS) that reduced data access time from weeks to hours and enables big data analytics, data mining, and machine learning application for large T&E data sets. This analytics framework was demonstrated in support of 5th generation platform test and evaluation and during long range missile flight test data reduction efforts ***FY 2024 Plans:*** -The JMETC Distributed Test Project will continue the buildout of an All-Domain Test Range to meet the joint test and evaluation needs for Service and Combatant Command in-theater experimentation. -The JMETC Distributed Test Project will continue transition of a DARPA capability for testing simulated and live fielded weapon systems from all operational domains together in a common, distributed environment to evaluate and integrate new joint command and control (C2) systems, novel operational concepts, experimental weapon systems and capabilities. -The JMETC Distributed Test Project will expand T&E tools as a service in the GovCloud. In addition, the JMETC team will provide on-site support for the execution of large-scale, complex distributed events. -The JMETC Distributed Test project will continue to modernize Knowledge Management post-test enterprise service capabilities. -The JMETC Distributed Test project will continue the development of a federated enterprise T&E data repository to support the evaluation of large data sets, including Artificial Intelligence (AI) data. -The JMETC Distributed Test project will continue the build out and acquisition of digital engineering tools and infrastructure to support the development of multi-Service, modernized warfighting capabilities in a digital environment, to include digital engineering infrastructure to support AI development. -The JMETC Distributed Test project will continue to support new and emerging acquisition programs. -The JMETC Distributed Test Project will continue development of a reference implementation of Modular Open Systems Architecture and data-centric approaches to C2 both to enable testing new versions of those standards as well as to serve as the test repository for universal C2 interfaces.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605100D8Z / *Joint Mission Environment Test Capability (JMETC)*	**Project (Number/Name)** 087 / *JMETC Distributed Test*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-The JMETC Distributed Test project will continue to optimize the JMETC Secret Network (JSN) infrastructure to meet requirements, adding or removing sites as necessary. -The JMETC Distributed Test project will continue supporting DoD distributed test and training events. -The JMETC Distributed Test project will continue providing test planning support to users and organizations to conduct interoperability testing on numerous DoD systems. -The JMETC Distributed Test project will continue to assist customers with the use of distributed test tools and troubleshooting of the end-to-end network infrastructures, to include continued expansion of T&E tools as a service in the GovCloud. In addition, the JMETC team will provide on-site support for the execution of large-scale, complex distributed events. -The JMETC Distributed Test project will transition work developed by DARPA and integrate the capabilities into the National Cyber Range, the distributed test networks, and remote test nodes (located at different test sites), to support the testing of JADC2 systems and applications. The primary focus will be in support of INDOPACOM experimentation and exercise campaigns. - Joint Fires Assessment and Networking Gear build and integration to enable integration of T&E, training and experimentation. - Stand-up and integration of OCONUS JSN with JMETC capabilities to extend CONUS T&E capabilities where needed and support information collection, integration and analysis. - Support of INDOPACOM experimentation exercises integrating SME's and T&E capabilities into the planning, set-up, execution and analysis ***FY 2025 Plans:*** -Increased cloud expansion to enable T&E data availability requirements across the acquisition lifecycle. Expansion of JSN connectivity to CONUS and OCONUS sites to enable integration of T&E capabilities with INDOPACOM. As a recognized enterprise CDS (eCDS) provider, making eCDS improvements to support T&E community emerging requirements to support other than secret and partner releasability requirements. Increased expansion of Development, Security, Operations (DevSecOps) capabilities to enable rapid cyber evaluation, integration and deployment of developed capabilities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in FY 2025 supports increased cloud expansion.			
Accomplishments/Planned Programs Subtotals	53.370	114.899	138.543

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605100D8Z / *Joint Mission Environment Test Capability (JMETC)*	**Project (Number/Name)** 087 / *JMETC Distributed Test*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605100D8Z / *Joint Mission Environment Test Capability (JMETC)*				Project (Number/Name) 088 / *JMETC National Cyber Range (NCR) Complex*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
088: *JMETC National Cyber Range (NCR) Complex*	320.572	135.326	72.522	70.465	-	70.465	71.721	72.646	74.101	75.584	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The National Cyber Range Complex (NCRC) is comprised of cyber ranges and a secure distributed network infrastructure to service the cyber range user community. The NCRC currently consists of five functional cyber ranges, including the National Cyber Range in Florida as well as four Regional Service Delivery Points (RSDP) located in Hawaii, Alabama, Maryland, and Massachusetts. To enhance DoD cyber range test and training capability and capacity, the NCRC is being expanded with additional cyber ranges co-located with key Service organizations at Naval Information Warfare Center Atlantic (NIWC LANT),SC; Naval Air Station Patuxent River (NAS Pax River), MD; and 46th Test Wing Eglin Air Force Base (AFB), FL to support an increase of cyber testing of DoD systems as well as training of cyber warfighters. The JMETC Multiple Independent Level of Security (MILS) Network (JMN) currently links 83 sites across the DoD, industry, and academia, providing secure access between cyber ranges, laboratories, and facilities. Both the cyber ranges and the network infrastructure are accredited to support multiple levels of security classifications, specifically configured to meet particular cyber event requirements. The NCRC investments have been aligned to support the National Defense Strategy in improving cyber defense, cyber resilience, cyber lethality, and the continued integration of cyber capabilities into the full spectrum of military operations.

The NCRC conducts cyberspace test and training events for the full spectrum of DoD customers including research, development, acquisition, testing, training and operational Cyber Mission Forces (CMF). The NCRC executes wide variety of event types including science and technology (S&T) demonstrations, developmental test and evaluation (DT&E), operational test and evaluation (OT&E), security controls assessments, capability assessments, cyberspace operations training, development and refinement of cyberspace tactics, techniques, and procedures (TTP), cyber forensics/malware analysis) and cyberspace operations mission rehearsal. The NCRC enables acquisition programs to conduct cybersecurity test and evaluation in an operationally representative cyberspace environment enabling identification, validation and mitigation of vulnerabilities. The NCRC also supports training, mission rehearsal and certification of the CMF in support of US Cyber Command by enabling operational forces to efficiently evaluate cyber warfighting capability in a realistic joint mission environment to include bi-lateral and multi-national exercises.

The NCRC provides secure facilities, technology, processes, and workforce to rapidly create hi-fidelity, mission-representative friendly, neutral, and adversarial cyberspace environments.

The NCRC also facilitates integration of distributed organizations with different missions and workforce relevant to cyber operations (e.g., cyber operators, penetrations testers, cyber assessors, cyber observers, cyber analysts, etc.). The NCRC supports cyber activities across of a full spectrum of DoD systems, including weapon platforms, C4I systems, business systems, network devices, and other systems vulnerable to a cyber-attack. The NCRC extensively utilizes automation to minimize human error, to reduce the time required to set-up for a cyber event, and to ensure repeatable results. In addition, the NCRC employs post-event sanitization techniques on all assets after exposure to malicious code to restore back to a known, clean state, which allows for reuse in future events.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605100D8Z / *Joint Mission Environment Test Capability (JMETC)*	**Project (Number/Name)** 088 / *JMETC National Cyber Range (NCR) Complex*

The NCRC has a multidisciplinary workforce with software, systems, network, virtualization, automation, system administration, and cybersecurity subject matter expertise. In support of successful planning and execution of hosted events, the NCRC workforce helps users define and refine their event objectives, assists with identifying and prioritizing potential vulnerabilities, designs virtualized cyber environments, develops customized traffic generation and instrumentation solutions, integrates 3rd party hardware and software, executes cyber events on behalf of the user, provides cooperative vulnerability and penetration assessments, performs detailed cyber analysis, and delivers detailed reports with actionable information to decision makers. In addition, the NCRC workforce supports both the Executive Agent for Cyber Test Ranges and the Executive Agent for Cyber Training Ranges, to identify and address relevant needs, define and promulgate standards, and seek efficiencies through focused investments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: JMETC National Cyber Range Complex (NCRC)	71.826	72.522	70.465
Description: -The NCRC continued support for over a hundred cyber events, providing cybersecurity T&E support to Major Defense Acquisition Programs (MDAP), Major Automated Information Systems (MAIS) Acquisition Programs, and smaller acquisition programs, as well as cybersecurity training to multiple COCOMS and Service organizations. -The NCRC continued support for cyber testing of systems and subsystems across multiple domains (land, air, sea, and space) relevant to manned and unmanned aircraft, surface ships, command and control systems, data management platforms, weapons platforms, satellites, radars, and missile defense systems. -The NCRC continues to support Cyber Table Tops (CTT) which help acquisition programs identify and prioritize potential vulnerabilities for further assessment and mitigation early in the acquisition lifecycle. -The NCRC continued support to Service Cyber Mission Forces (CMF) with training, certification, mission rehearsal and TTP development focused events. -The NCRC continued support to numerous DoD organizations in cyber activities, including Army CEC Test and Evaluation, Army Combat Capabilities Development Command, Army PEO C3T, Army PEO IEW&S, Army PEO M&S, Army PEO STRI, Army Test and Evaluation Command(ATEC), Defense Research Projects Agency (DARPA), Defense Threat Reduction Agency (DTRA), Integrated Air Missile Defense (IAMD), Joint Staff J6, Missile and Space Intelligence Center (MSIC), Missile Defense Agency (MDA), Mississippi National Guard, NAVAIR PEO(A), NAVAIR PEO(U&W), Naval Air Warfare Center Aircraft Division (NAWCAD), Naval Air Warfare Center Training Systems Division (NAWCTSD), Naval Air Warfare Center Weapons Division (NAWCWD), Naval Air Warfare Center Weapons Division (NAWCWD) China Lake, Naval Air Warfare Center Weapons Division (NAWCWD) Point Mugu, Naval Information Warfare Center (NIWC) Atlantic, Naval Undersea Warfare Center (NUWC) Division Newport, NAVSEA PEO Ships, NAVSEA Red Team, NSWC Dahlgren, Office Secretary of Defense Research and Engineering OUSD(R&E), US Army INSCOM G7, USCYBERCOM, USINDOPACOM, and USMC Information Maneuver Division, and several partner nations.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605100D8Z / *Joint Mission Environment Test Capability (JMETC)*	**Project (Number/Name)** 088 / *JMETC National Cyber Range (NCR) Complex*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-Activities continued to establish new government-controlled cyber range facilities, to include facility conversion work, procurement of computing resources, physical security accreditation, and development of training courseware for utilization of core NCRC cyber range tools by new NCRC workforce members. -The NCRC established a multi-award IDIQ contract to expand the pool of NCRC contractor workforce members with a diverse set of required knowledge and skills to perform key functions at each NCRC location. Task Orders awards underneath the multi-award IDIQ continue to be executed. -The NCRC implemented an NCRC unclassified (NCRC-U) capability to provide increased access by government, academia, and industry to cyber range resources. The NCRC-U capability hosted cyber T&E workforce development activities for multiple government customers and academia to strengthen cyber vulnerability assessment expertise. ***FY 2024 Plans:*** -The NCRC will continue implementing improvements needed to increase capacity to support increased demand at the current and future cyber ranges. -The NCRC will continue to build out additional dedicated Persistent Testing and Training Environments to support testing and training customers. -The NCRC will continue to operate in support of the growing acquisition program cybersecurity T&E requirements. -The NCRC will continue to provide Cyber Table Top support for acquisition programs to help identify and prioritize potential vulnerabilities early in the development lifecycle. -The NCRC will continue to provide support to U.S. Cyber Command, Joint Staff, and other training and certification events by developing representative blue, red and gray environments. -The NCRC will continue to support DOT&E cyber assessments. -The NCRC will continue to support US Cyber Command and other COCOMS with their training, team certification and mission rehearsal activities.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605100D8Z / *Joint Mission Environment Test Capability (JMETC)*	**Project (Number/Name)** 088 / *JMETC National Cyber Range (NCR) Complex*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
-The NCRC will conduct engineering activities to plan for technical refresh of emerging end of life and end of service computing assets. -The NCRC will continue to assess cyber range requirements in close cooperation with the Executive Agents for Cyber Test Ranges and Cyber Training Ranges to build priority cyber range capability and capacity to meet identified RDT&E community and CMF needs. -The NCRC will continue to assist the Executive Agents for Cyber Test Ranges and Cyber Training Ranges to determine requirements and standards needed to integrate these cyber range facilities with existing acquisition system hardware-in-the-loop, software-in-the-loop, and systems integration laboratories to test systems and train operators in a realistic cyber contested environment. -The NCRC will continue to expand the JMN connectivity as needed to provide access to cyber range resources. -The NCRC will continue to initiate new cyber range capability and development to directly address test and training needs. -The NCRC will continue activities to build out new government-controlled cyber range facilities, to include facility conversion work, procurement and installation of computing resources, physical security accreditation, and information system security accreditation. -The NCRC will continue testing of cyber vulnerabilities associated with trusted artificial intelligence systems. -The NCRC will continue workforce development and Unclassified cyber test event execution at the NCRC-U capability. -The distributed cyber test team will complete the transition of technology from DAPRA to the TRMC in support of INDOPACOM requirements.			
FY 2025 Plans: Anticipate expansion of secure, distributed JMN connectivity to an additional 20-30 sites to include OCONUS and Partner facilities. Achieve full operational capability (FOC) at cyber ranges co-located with key Service organizations at Naval Information Warfare Center Atlantic (NIWC LANT), SC; Naval Air Station Patuxent River (NAS Pax River), MD; and 46th Test Wing Eglin Air Force Base (AFB), FL to address growing demand for cybersecurity test, training, experimentation, and mission rehearsal.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605100D8Z / *Joint Mission Environment Test Capability (JMETC)*	**Project (Number/Name)** 088 / *JMETC National Cyber Range (NCR) Complex*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Decrease in FY 2025 is due to programmatic adjustments.			
Accomplishments/Planned Programs Subtotals	71.826	72.522	70.465

	FY 2023	FY 2024
Congressional Add: Data Management/Big Data Analytics ***FY 2023 Accomplishments:*** Program details are classified.	60.000	-
Congressional Add: Artiticial Intelligence Hub Infrastructure ***FY 2023 Accomplishments:*** Program details are classified.	3.500	-
Congressional Adds Subtotals	63.500	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605128D8Z / *Classified Program USD(P)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	1,195.821	145.800	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
128: *Classified Program*	1,195.821	145.800	0.000	0.000	-	0.000	0.000	0.000	-	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

Classified

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	145.800	0.000	0.000	-	0.000
Current President's Budget	145.800	0.000	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 128: *Classified Program*		
Congressional Add: *Classified*	145.800	0.000
Congressional Add Subtotals for Project: 128	145.800	0.000
Congressional Add Totals for all Projects	145.800	0.000

Change Summary Explanation

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605128D8Z *I Classified Program USD(P)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024
Congressional Add: Classified	145.800	0.000
FY 2023 Accomplishments: Classified		
FY 2024 Plans: Classified		
Congressional Adds Subtotals	145.800	0.000

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

E. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605142D8Z / *Systems Engineering*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	373.949	37.174	39.949	24.669	-	24.669	23.487	23.781	24.295	24.783	Continuing	Continuing
142: *Systems Engineering*	343.274	16.812	22.179	20.538	-	20.538	20.138	20.736	21.188	21.614	Continuing	Continuing
842: *Mission Engineering*	20.759	11.939	13.073	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
144: *Program Engagement and Independent Assessments*	9.916	8.423	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
152: *Engineering Architectures*	0.000	0.000	4.697	4.131	-	4.131	3.349	3.045	3.107	3.169	Continuing	Continuing

Note

New Start (Y/N): No

In FY 2025, the Under Secretary of Defense for Research & Engineering (USD(R&E)) will realign funding from Project Code 842 to Mission Engineering and Integration (ME&I) Program Element 0603142D8Z, Project Code 123 to fund the Office of Mission Integration (MI). This new funding structure, which separates funding for MI from funding for the Office of Systems Engineering and Architecture (SE&A), will better reflect the organizational structure of the Office of the Under Secretary of Defense for Research and Engineering.

A. Mission Description and Budget Item Justification

This Program establishes dedicated funding to carry out the duties as described in 10 U.S.C 133a and the Department of Defense Directive 5137.02, “Under Secretary of Defense for Research and Engineering (USD(R&E)),” dated July 15, 2020. In addition, the Program supports the National Defense Strategy and enables the Department to defend the homeland; deter strategic attacks against the United States, Allies, and partners; deter aggression; and build a resilient Joint Force and defense ecosystem.

This funding directly supports Major Defense Acquisition Programs in accordance with the National Defense Strategy and in support of the critical technology areas advanced by the Under Secretary of Defense for Research & Engineering. Furthermore, it supports the implementation of Department initiatives and advances the development and adoption of emerging technologies with speed and agility in the areas of interoperability, digital engineering, software engineering, model-based systems engineering, specialty engineering, value engineering, modular open systems approaches (MOSA), and standardization.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605142D8Z / *Systems Engineering*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	38.585	39.949	37.648	-	37.648
Current President's Budget	37.174	39.949	24.669	-	24.669
Total Adjustments	-1.411	0.000	-12.979	-	-12.979
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.407	-			
• Program Realignments	-	-	-12.780	-	-12.780
• Cancelled Account	-0.004	-	-	-	-
• Program Adjustment	-	-	-0.199	-	-0.199

Change Summary Explanation

FY 2023 change in Current President's Budget from Previous President's Budget is due to SBIR/STTR (-$1.408 million) and Cancelled Accounts (-$0.004 million) reductions.

The FY 2025 funding reduction is composed of a realignment of $12.780 million from Project Code 842 to Mission Engineering and Integration (ME&I) Program Element 0603142D8Z, Project Code 123 to fund the Office of Mission Integration (MI). This funding structure will better reflect the organizational structure of the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)).

A reduction of $0.249 million was applied to DoD overall funding reductions, which were spread to mitigate impact. A funding increase of $0.05 million is for Economic Assumptions. Overall net reduction of $0.199 million applied.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605142D8Z / *Systems Engineering*	Project (Number/Name) 142 / *Systems Engineering*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
142: *Systems Engineering*	343.274	16.812	22.179	20.538	-	20.538	20.138	20.736	21.188	21.614	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Systems Engineering project provides resources to develop and promote advanced engineering principles, techniques, and practices across the Department of Defense, connects and strengthens the technical community, develops the engineering and technical workforce, advances and manages standards, and provides technical expertise for independent engineering assessments to advance the development and adoption of emerging technologies with speed and agility. On behalf of the Under Secretary of Defense for Research and Engineering (USD(R&E)), this project executes the following activities:

• Supports USD(R&E)'s initiatives to modernize the Department of Defense's systems and software engineering practices to include the use of modular open systems approaches (MOSA) and advanced systems engineering techniques to build systems capable of seamlessly incorporating new technologies to respond to emerging threats.
• Implements digital engineering, modeling, and simulations to allow the Department of Defense to rapidly field and implement innovative technologies for the Joint warfighter.
• Supports the adoption of modern Agile/DevSecOps (Development, Security, and Operations) software practices and improves cross-organizational collaboration to modernize Department of Defense software processes, capability, and expertise.
• Continues to support execution of the approved DoD Software Science & Technology Strategy through completion and execution of the Software S&T Implementation Plan. Supports collaboration and management activities through the DoD Software Modernization Senior Steering Group in coordination with the Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S)), DoD Chief Digital and Artificial Intelligence Office (CDAO), DoD Chief Information Officer (CIO), and the Services.
• Improves delivery of advanced capability to warfighters by modernizing reliability and maintainability, manufacturing and quality, system safety, human systems integration, and value engineering practices.
• Identifies, develops, manages, and provides access to standardization processes and products for the defense community to promote interoperability, reduce cost, and sustain readiness.
• Leads production of policy, guidance, and workforce development initiatives for the Department of Defense engineering and technical workforce.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Systems Engineering	16.812	22.179	20.538
Description: The Systems Engineering project supports and improves the OUSD(R&E)'s efforts in digital engineering, MOSA, software modernization, and standardization management. In addition, the funds facilitate the identification of workforce challenges and allow OUSD(R&E) to champion initiatives to ensure the Department of Defense maintains its advantage in warfighter readiness in a rapidly evolving technological environment.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605142D8Z / *Systems Engineering*	**Project (Number/Name)** 142 / *Systems Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: • Support building a resilient Joint Force and defense ecosystem by: engaging with technology demonstration efforts to develop next-generation data analytics and rapid prototypes; collaborating within the Office of the Secretary of Defense to address Development Test, Evaluation, and Assessment digital transformation needs; and executing prototyping efforts in the area of application programming interfaces (APIs) to modernize DoD's approach to interoperability. • Support model-based systems engineering (MBSE) to enable faster adoption and deployment of the 14 critical technology areas in the National Defense Science and Technology Strategy and the DoD Software Science and Technology Strategy. • Promote the adoption of operational imperatives for open system standards and architectures for unmanned air systems (UASs) and position, navigation, and timing (PNT) as directed by the National Defense Strategy and the 2020 Joint Requirements Oversight Council (JROC) Modular Open Systems Approach (MOSA) memo. • Serve as Lead Standardization Activity for Department of Defense systems engineering specifications and standards, modular and open systems standards and specifications (MOSS), and modeling and simulation standards and methodologies. • Create combat efficiencies by reducing failure modes, hazards, and defects early and throughout the capability life cycle of weapon systems. • Coordinate and oversee OUSD(R&E) efforts to support civilian harm mitigation and response (CHMR). • Coordinate software engineering modernization in areas of enterprise cloud services, software factories, DevSecOps (Development, Security, and Operations), continuous delivery pipelines, and applications of artificial intelligence in the warfighting domain. • Develop the engineering workforce by working with MILDEPs, Defense Acquisition University, and other DoD Agencies to deploy training credentials in needed technical skill areas. Address those technical skills needed to transition technology into usable capabilities. Continue leading the DoD Digital Talent Management Forum and supporting collaboration across the Office of the Secretary of Defense (OSD) and the Services to expand the software engineering work role definition for enhanced workforce management as directed by the Deputy Secretary of Defense. • Provide engineering staff support to OUSD(R&E)'s critical technical reviews and independent technical risk assessments. • Serve as the Defense Standardization Executive, coordinating standards activities with the DoD community and the Defense Standardization Program Office. • Update the Digital Engineering Strategy and publish the Modeling and Simulation Strategy in support of the National Defense Science and Technology Strategy.			
FY 2025 Plans: • Continue to support building a resilient Joint Force and defense ecosystem through: engaging with technology demonstration efforts to develop next-generation data analytics and rapid prototypes; collaborating within OSD to address Development Test, Evaluation, and Assessment digital transformation needs; and executing prototyping efforts in the area of application programming interfaces (APIs) to modernize DoD's approach to interoperability.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605142D8Z / *Systems Engineering*	**Project (Number/Name)** 142 / *Systems Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Continue to support model-based systems engineering (MBSE) to enable faster adoption and deployment of the 14 critical technology areas in the National Defense Science and Technology Strategy and the DoD Software Science and Technology Strategy. • Continue to serve further Department of Defense efforts as Lead Standardization Activity for systems engineering specifications and standards, modular and open systems standards and specifications (MOSS), and modeling and simulation standards and methodologies. • Develop additional combat efficiencies by reducing failure modes, hazards, and defects early and throughout the capability life cycle of weapon systems. • Continue coordinating software engineering modernization in areas of enterprise cloud services, software factories, DevSecOps (Development, Security, and Operations), continuous delivery pipelines, and applications of artificial intelligence in the warfighting domain. • Continue to support the Department of Defense in its efforts to advance its digital engineering (DE) and modeling and simulation (M&S) efforts in support of the National Defense Science and Technology Strategy. • Continue to oversee OUSD(R&E) efforts to support civilian harm mitigation and response (CHMR). • Continue to work with MILDEPs, Defense Acquisition University, and other DoD Agencies to deploy training credentials in needed technical skill areas. • Continue leading the DoD Digital Talent Management Forum and supporting collaboration across OSD and the Services to define the software engineering work roles for enhanced workforce management as directed by the Deputy Secretary of Defense. • Provide engineering staff support to OUSD(R&E)'s critical technical reviews and independent technical risk assessments. • Serve as the Defense Standardization Executive, coordinating standards activities with the DoD community and the Defense Standardization Program Office. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of -$1.476 million in FY 2025 is due to anticipation that in FY 2024 significant progress will have been made toward strengthening and championing engineering and innovation efforts across the DoD.			
Accomplishments/Planned Programs Subtotals	16.812	22.179	20.538

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605142D8Z / *Systems Engineering*	Project (Number/Name) 842 / *Mission Engineering*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
842: *Mission Engineering*	20.759	11.939	13.073	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2025, the Under Secretary of Defense for Research & Engineering (USD(R&E)) will realign funding from Project Code 842 to Mission Engineering and Integration (ME&I) Program Element 0603142D8Z, Project Code 123 to fund the Office of Mission Integration (MI). This new funding structure, which separates funding for MI from funding for the Office of Systems Engineering and Architecture (SE&A), will better reflect the organizational structure of the Office of the Under Secretary of Defense for Research and Engineering. FY 2025 funding from Program Element 0603142D8Z, Project Code 123 will exist as a continuation of FY 2024 efforts, which Program Element 0605142D8Z, Project Code 842 would have previously funded. To supplement those efforts, additional funding will be realigned to Program Element 0603142D8Z, Project Code 123 from the Trusted & Assured Microelectronics Program Element 0605294D8Z to support deepened analysis of recommended technologies that eliminate or disrupt adversary kill chains or deliver superior Blue Force kill chains.

A. Mission Description and Budget Item Justification

The Mission Engineering project activities include the following functions:

• Carry out responsibilities described in the National Defense Authorization Act for FY 2017, Section 855 titled Mission Integration Management (MIM) and supports the National Defense Strategy goals of developing new joint warfighting concepts and modernization of emerging capabilities to achieve a more lethal force.

• Achieve full operational capability of the mission engineering framework that was built in FY 2021 to instantiate the technical element of MIM and identify and promulgate best practices for mission-focused analyses and studies.

• Ensure the DoD applies engineering rigor to both operational and technical analysis of future capabilities to enable the DoD leaders to make informed investment decisions and deliver technologies and capabilities to close mission gaps in response to new threats.

• Execute multiple mission engineering studies in support of the National Defense Strategy modernization areas to identify technology solutions, advise on development of requirements, and develop Government Reference Architectures (GRA) for new joint warfighting capabilities, which are a key enterprise document that will be used to guide development of capabilities that are required for warfighters to carry out operational and tactical missions against our adversaries.

• In coordination with the Joint Staff, the Office of the Secretary's Office for Cost Assessment & Program Evaluation (OSD(CAPE)), the Under Secretary for Acquisition & Sustainment (USD(A&S)), Combatant Commands, Services, and other stakeholders, provide engineering analysis and studies at the campaign, mission, and engagement levels to support the prioritization and development of the Department’s technology modernization and prototyping roadmaps.

• Continue the development of the technical infrastructure and analysis tools for engineering studies and data mining as well as modeling and simulation analytic tools to support this effort.

• Support the analysis of as is operational and technical architectures of current joint capabilities and further support the development of to be GRAs of future required capabilities to align investment opportunities with emerging technological developments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Mission Integration	11.939	13.073	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605142D8Z / *Systems Engineering*	**Project (Number/Name)** 842 / *Mission Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: Continued execution of the Strategic Thrusts identified within the FY 2023 Plans above with continued expansion of scope of Mission Integration Management activities that both implement the National Defense Authorization Act for FY 2017 Section 855 and support the National Defense goals of developing new joint warfighting concepts and modernizing capabilities to achieve a more lethal force. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** In FY 2025, funding will be realigned from the Mission Engineering project to Mission Engineering and Integration (ME&I) Program Element 0603142D8Z, Project Code 123 to fund the Office of Mission Integration. Funding and efforts that would have previously been done in this Program Element and project code will continue under Program Element 0603142D8Z, project code 123.			
Accomplishments/Planned Programs Subtotals	11.939	13.073	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605142D8Z / *Systems Engineering*	Project (Number/Name) 144 / *Program Engagement and Independent Assessments*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
144: *Program Engagement and Independent Assessments*	9.916	8.423	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Program Engagement and Independent Assessments program activities include the following functions:

• Conducts and approves Independent Technical Risk Assessments (ITRAs) on Acquisition Category (ACAT)-1D Major Defense Acquisition Programs (MDAPs). Reviews and approves ITRAs on select high priority ACAT 1B/1C MDAPs.

• Conceive plans and conducts Preliminary and Critical Design Review Assessments of MDAPs under the Office of the Secretary of Defense (OSD) purview.

• Pursuant to U.S.C. 10 Sec 2366 requirements, provides basis for critical technology and manufacturing process determinations and certifications of MDAPs under OSD purview.

• Satisfies U.S.C. 10 Sec 2448a requirements by providing risk assessments to support the development of cost, schedule, and performance targets.

• Support acceleration of USD(R&E)'s critical technology initiatives in accordance with the National Defense Strategy.

• Conduct other technical reviews as requested, such as Nunn-McCurdy certification reviews, Non-Advocate Reviews, focused technical assessments, and software readiness reviews to identify and mitigate program risk.

• Oversee Service and other Component organizations' implementation of engineering initiatives and approve or conduct independent assessments.

• Guide Service and other component organizations in the development planning process to ensure proposed MDAP programs are executable within acceptable levels of risk.

• Provide Systems Engineering support to MDAPs. Review the systems engineering plans (SEPs) and activities for MDAPs.

• Monitor and advise the Under Secretary of Defense for Research & Engineering (USD(R&E)) and the Under Secretary of Defense for Acquisition & Sustainment USD(A&S) on technical and engineering aspects of MDAPs and select alternate acquisition pathway programs to ensure they are adequate to support fielding and the achievement of cost, schedule and performance goals to include readiness, i.e. producibility, reliability, maintainability, sustainment, and other considerations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Development Test Evaluation and Assessments	8.423	-	-
Accomplishments/Planned Programs Subtotals	8.423	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605142D8Z / *Systems Engineering*	**Project (Number/Name)** 144 / *Program Engagement and Independent Assessments*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605142D8Z / *Systems Engineering*	Project (Number/Name) 152 / *Engineering Architectures*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
152: *Engineering Architectures*	0.000	0.000	4.697	4.131	-	4.131	3.349	3.045	3.107	3.169	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Engineering Architectures project advances efforts in system-of-systems architecture for the Department of Defense. The project will support the development of an enterprise-wide strategy to integrate existing and future systems to improve the Department's technological advantage in joint, multidomain operations.

Systems Engineering & Architectures (SE&A) develops policy, guidance, and training to enable rigorous engineering and the accelerated delivery of affordable, innovative, and operationally relevant mission capabilities for U.S. all-domain dominance in an environment with scarce resources, near-peer threats, and continual, rapid, and complex technological change. On behalf of the Under Secretary of Defense for Research & Engineering, this project executes the following activities:

• Supports acquisition programs in the development and execution of system-of-systems engineering and architectures to enable accelerated delivery of innovative mission capabilities.
• Supports the development of enterprise system-of-systems engineering architecture guidance to facilitate improved interoperability in acquisition programs.
• Develops a workforce capable of fielding and sustaining enterprise system-of-systems engineering and architectures.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Engineering Architectures	-	4.697	4.131
Description: The Engineering Architectures project supports and improves OUSD(R&E)'s efforts in Nuclear Command, Control, and Communications (NC3) and Combined Joint All-Domain Command and Control (CJADC2) as they progress through the acquisition life cycle. In addition, the funds support the development of policy and guidance for modular open systems approach (MOSA).			
FY 2024 Plans: • Develop the annual NC3 Technology Development Plan that provides an inventory of NC3-related R&D efforts and provides analysis on how the efforts address NC3 gaps. • Provide NC3 systems engineering and architecture assistance to the Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)) and CDR USSTRATCOM. • Provide NC3 systems engineering and architecture assistance to Combined Joint All-Domain Command and Control (CJADC2). • Collaborate with Joint Staff to develop a handbook for the adoption of Artificial Intelligence in CJADC2.			
FY 2025 Plans: • Update the annual Nuclear Command, Control, and Communications (NC3) Technology Development Plan to reflect changes in NC3-related research and development (R&D) efforts and how they address NC3 gaps.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605142D8Z / *Systems Engineering*	**Project (Number/Name)** 152 / *Engineering Architectures*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Continue to provide NC3 systems engineering and architecture assistance to USD(A&S) and CDR USSTRATCOM. • Continue to provide NC3 systems engineering and architecture assistance to CJADC2. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no significant change between FY 2024 and FY 2025.			
Accomplishments/Planned Programs Subtotals	-	4.697	4.131

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605151D8Z / *Studies and Analysis Support – OSD*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	43.633	5.123	6.292	6.289	-	6.289	6.429	6.563	6.700	6.834	-	-
151: *Studies and Analysis Support – OSD*	43.633	5.123	6.292	6.289	-	6.289	6.429	6.563	6.700	6.834	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The OUSD(P&R)'s Studies and Analysis Support program serves to leverage specialized expertise and critical capabilities designed to help meet varied research, study, and analytical support needs in the manpower, personnel, talent management, force readiness, training, education, force safety, family support, resiliency, and health services portfolios. This funding supports intellectually rigorous, relevant, and timely assessments of policies, programs, and procedures across the P&R enterprise. Funded research, studies, program evaluations, surveys, and analysis support P&R roles in executing the National Defense Strategy in a proactive and forward leaning posture, focusing on a strategic programmatic and policy framework for the future.

This program advances P&R's statutory title 10 and Principal Staff Assistant responsibilities with respect to promoting a ready and agile Total Force positioned to execute the Department's mission. Additionally, this program supports the Secretary of Defense's top 3 priorities (Defend Our Nation, Succeed Through Teamwork, and Take Care of People) as well as the 2022 National Defense Strategy imperatives.

Funding is leveraged to address key strategic and long-term challenges facing the Department, and includes targeted assessments to support program evaluation and efficacy. It also encompasses comprehensive research and complex exploration to support data-aligned, insights-driven, and outcome-based decision-making and critical analysis to develop needed evidentiary bases for policy development or modification.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605151D8Z *I Studies and Analysis Support – OSD*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	5.219	6.292	6.289	-	6.289
Current President's Budget	5.123	6.292	6.289	-	6.289
Total Adjustments	-0.096	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.096	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

No changed in FY 2025 from previous PB.

FY 2025 minimal decrease from FY 2024 for program adjustments to leverage specialized expertise and critical capabilities designed to help meet varied research, study, and analytical support needs in the manpower, personnel, talent management, force readiness, training, education, force safety, family support, resiliency, and health services portfolios.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605151D8Z / *Studies and Analysis Support – OSD*	Project (Number/Name) 151 / *Studies and Analysis Support – OSD*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
151: *Studies and Analysis Support – OSD*	43.633	5.123	6.292	6.289	-	6.289	6.429	6.563	6.700	6.834	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The OUSD(P&R) Studies and Analysis Support program serves to leverage specialized expertise and critical capabilities designed to help meet varied research, study, and analytical support needs in the manpower, personnel, human capital, force readiness, training, education, force safety, family support, resiliency, and health services portfolios. This funding line supports independent, intellectually rigorous, relevant, impartial, objective, and timely assessment of policies, programs, and procedures across the P&R enterprise. Funded research, studies, program evaluations, surveys, and analysis support P&R in executing the National Defense Strategy and DoD leadership priorities in a proactive and forward leaning posture, focusing on a strategic programmatic and policy framework for the future of the Department's force development, talent management, and readiness. Funding is leveraged to address critical and complex, inter-disciplinary strategic long-term challenges facing the Department, and includes targeted assessments to support program evaluation and efficacy. It also encompasses comprehensive research and complex exploration to support data-aligned, insights-driven, and outcome-based decision-making and critical analysis to develop needed evidentiary bases for policy development or modification in support of the Administration's priorities, congressional direction, and Secretary of Defense direction.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Studies and Analysis Support – OSD	5.123	6.292	6.289
Description: P&R's Studies and Analysis program is focused on efforts that align with the National Defense Strategy, particularly to Build Enduring Advantages and a joint warfighting ecosystem that is supported by a ready and capable Total Force. Resources fund Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and other contracts for studies, analysis, research, and surveys that address the strategic challenges facing P&R and the Department of Defense, reflect enterprise-wide equities, focus on strategic programmatic and policy frameworks, and fund efforts that we cannot accomplish internally.			
FY 2024 Plans: Build on the efforts from FY 2023 to: • Promote military readiness by decreasing the prevalence of readiness-detracting behavior and evaluating military health readiness. • Advance our strategic readiness by refining personnel readiness modeling to better understand the impacts of cost and risk, analyzing optimal training solutions, and understanding the impacts of climate. • Strengthen the all-volunteer force through a holistic, cross-domain, and interdisciplinary evaluation of its past, present, and future.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605151D8Z / *Studies and Analysis Support – OSD*	**Project (Number/Name)** 151 / *Studies and Analysis Support – OSD*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Optimize recruitment and retention efforts by better understanding the associated budgetary requirements, maximizing our return on investment, and identifying optimal strategies to engage with underrepresented demographic groups. ***FY 2025 Plans:*** Build on the efforts from FY 2024 to: • Advance strategic readiness assessments and modelling over time and threat horizons • Cultivate talent management through a human capital management paradigm shift – evolving the relationship between the Department, our current workforce, and prospective talent in the marketplace through the adoption of contemporary workforce development and talent acquisition approaches – that attracts and retains the best people to meet the challenges of the global security environment and imperatives of the National Defense Strategy and positions the Department as an employer of choice for both uniformed and civilian service. • Change the culture of the Department to build a climate of dignity and respect, eliminate stigma, and prevent harmful behaviors across all DoD. • Promote the health, safety, and well-being of our Force and families. • Support our personnel and families/beneficiaries by evaluating compensation frameworks and reviewing the implications of modifications to benefits. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease to leverage specialized expertise and critical capabilities designed to help meet varied research, study, and analytical support needs in the manpower, personnel, talent management, force readiness, training, education, force safety, family support, resiliency, and health services portfolios.			
Accomplishments/Planned Programs Subtotals	5.123	6.292	6.289

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605161D8Z / *Nuclear Matters-Physical Security*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	77.270	17.370	21.043	19.871	-	19.871	19.491	19.504	19.853	20.226	Continuing	Continuing
161: *Nuclear Matters*	77.270	17.370	21.043	19.871	-	19.871	19.491	19.504	19.853	20.226	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This Program Element supports the 2022 National Defense Strategy's four top-level defense priorities by: Defending the homeland, paced to the growing multi-domain threat posed by the People's Republic of China (PRC); Deterring strategic attacks against the United States, Allies, and partners; Deterring aggression, while being prepared to prevail in conflict when necessary – prioritizing the PRC challenge in the Indo-Pacific region, then the Russia challenge in Europe, and; Building a resilient Joint Force and defense ecosystem.

The mission of Nuclear Matters is to ensure the continued credibility, safety, security, resiliency, and effectiveness of the U.S. nuclear deterrent to deter adversaries, assure allies and partners, and achieve U.S. objectives if deterrence fails—today and in the future. Nuclear Matters serves as the Department of Defense (DoD) focal point for the modernization and sustainment of the U.S. nuclear weapons stockpile, as well as for a wide range of nuclear counter-terrorism and counter-proliferation issues.

The funds for this program are used to support research, development, test and evaluation efforts as well as studies and analyses for nuclear weapons modernization, sustainment, security, use control, nuclear weapons stockpile safety, and survivability requirements. Funds are also used to develop and implement plans for the future of the stockpile and broader nuclear deterrent; infrastructure analyses and assessments; DoD-National Nuclear Security Administration (NNSA) Nuclear Weapons Council (NWC) activities, as mandated by Title 10 U.S. Code, section 179; radiological and nuclear emergency response efforts; and management of international programs of nuclear cooperation, particularly with respect to enhancing international nuclear safety and security. Nuclear Matters is also responsible for policy development and implementation for personnel reliability; nuclear weapons, nuclear command and control, and special nuclear materials security; use control; nuclear weapons transportation; physical security equipment; countering nuclear threats; and nuclear and radiological incident response. Additionally, Nuclear Matters serves as a focal point for DoD activities and initiatives related to countering the threat from nuclear terrorism and nuclear proliferation.

Nuclear Matters is leading a series of efforts to provide data-driven support to integrated portfolio management for 21st century nuclear deterrent sustainment and modernization. The United States is modernizing all three legs of its nuclear triad and is also reconstituting its nuclear weapons production capability at roughly the same time, while simultaneously sustaining weapons and systems that have aged well beyond their original design lives. The NWC and similar bodies seek to manage the transition from legacy Cold War delivery systems and weapons to replacement systems and warheads and make decisions that will affect U.S. national security through the end of the 21st century. To field a modern, threat-informed, nuclear deterrent that will keep pace with evolving adversary capabilities, it is necessary to conduct a variety of assessment and study efforts to enable data-driven decisions concerning the future of the U.S. nuclear deterrent.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605161D8Z / *Nuclear Matters-Physical Security*

To meet the 2023 National Defense Authorization Act requirement to implement a portfolio management framework for nuclear forces, the Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs will lead a nuclear integration and analysis cell to identify and analyze risks and opportunities across the nuclear enterprise. This effort will leverage advanced data analytics, enterprise risk management, and modeling and simulation tools across the nuclear deterrent portfolio to support data-driven decisions by the Nuclear Weapons Council and the newly formed Nuclear Deputy's Management Action Group which, "provide[s] senior leaders a comprehensive and strategic view of the state of the enterprise and prioritize[s] actions for executive decision."

This Program Element can fund travel to support the requirements of this program.

This appropriation will finance work, including manpower, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct research (systematic study directed toward fuller scientific knowledge or understanding of the subject studied), development (systematic use of the knowledge and understanding gained from research, for the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes) and test and evaluation efforts.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	15.039	21.043	21.043	-	21.043
Current President's Budget	17.370	21.043	19.871	-	19.871
Total Adjustments	2.331	0.000	-1.172	-	-1.172
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.881	-			
• SBIR/STTR Transfer	-0.550	-			
• Defense-Wide Topline Adjustment	-	-	-1.172	-	-1.172

Change Summary Explanation

No change in FY 2025 from previous President's Budget.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605161D8Z / *Nuclear Matters-Physical Security*	Project (Number/Name) 161 / *Nuclear Matters*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
161: *Nuclear Matters*	77.270	17.370	21.043	19.871	-	19.871	19.491	19.504	19.853	20.226	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of Nuclear Matters is to ensure the continued credibility, safety, security, resiliency, and effectiveness of the U.S. nuclear deterrent to deter adversaries, assure allies and partners, and achieve U.S. objectives if deterrence fails—today and in the future. Nuclear Matters serves as the Department of Defense (DoD) focal point for the modernization and sustainment of the U.S. nuclear weapons stockpile, as well as for a wide range of nuclear counter-terrorism and counter-proliferation issues.

The funds for this program are used to support research, development, test and evaluation efforts as well as studies and analyses for nuclear weapons modernization, sustainment, security, use control, nuclear weapons stockpile safety, and survivability requirements. Funds are also used to develop and implement plans for the future of the stockpile and broader nuclear deterrent; infrastructure analyses and assessments; DoD-National Nuclear Security Administration (NNSA) Nuclear Weapons Council (NWC) activities, as mandated by Title 10 U.S. Code, section 179; radiological and nuclear emergency response efforts; and management of international programs of nuclear cooperation, particularly with respect to enhancing international nuclear safety and security. Nuclear Matters is also responsible for policy development and implementation for personnel reliability; nuclear weapons, nuclear command and control, and special nuclear materials security; use control; nuclear weapons transportation; physical security equipment; countering nuclear threats; and nuclear and radiological incident response. Additionally, Nuclear Matters serves as a focal point for DoD activities and initiatives related to countering the threat from nuclear terrorism and nuclear proliferation.

Nuclear Matters is leading a series of efforts to provide data-driven support to integrated portfolio management for 21st century nuclear deterrent sustainment and modernization. The United States is modernizing all three legs of its nuclear triad and is also reconstituting its nuclear weapons production capability at roughly the same time, while simultaneously sustaining weapons and systems that have aged well beyond their original design lives. The NWC and similar bodies seek to manage the transition from legacy Cold War delivery systems and weapons to replacement systems and warheads and make decisions that will affect U.S. national security through the end of the 21st century. To field a modern, threat-informed, nuclear deterrent that will keep pace with evolving adversary capabilities, it is necessary to conduct a variety of assessment and study efforts to enable data-driven decisions concerning the future of the U.S. nuclear deterrent.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Nuclear Integration and Analysis	2.111	6.814	5.882
Description: To meet the 2023 National Defense Authorization Act requirement to implement a portfolio management framework for nuclear forces, the Office of Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs will lead a nuclear integration and analysis cell to identify and analyze risks and opportunities across the nuclear enterprise.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605161D8Z / *Nuclear Matters-Physical Security*	**Project (Number/Name)** 161 / *Nuclear Matters*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
This effort will leverage advanced data analytics, enterprise risk management, and modeling and simulation tools across the nuclear deterrent portfolio to support data-driven decisions by the Nuclear Weapons Council and the newly formed Nuclear Deputy's Management Action Group which, "provide[s] senior leaders a comprehensive and strategic view of the state of the enterprise, and prioritize[s] actions for executive decision." ***FY 2024 Plans:*** This effort will result in achieving key Office of the Secretary of Defense-level metrics, including: - Improve understanding of the health and wellness of the Nuclear Enterprise; - Identify and exploit schedule and fiscal opportunities in nuclear modernization efforts; - Improve understanding of strategic advantage relative to the increasing threats posed by Russia and China; and - Identify and correct gaps and seams across the five major components of the nuclear enterprise. ***FY 2025 Plans:*** This effort will result in achieving key Office of the Secretary of Defense-level metrics, including: - Improve understanding of the health and wellness of the Nuclear Enterprise; - Identify and exploit schedule and fiscal opportunities in nuclear modernization efforts; - Improve understanding of strategic advantage relative to the increasing threats posed by Russia and China; and - Identify and correct gaps and seams across the five major components of the nuclear enterprise. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There are no significant changes between FY 2024 and FY 2025.			
Title: Nuclear Weapons Council (NWC) ***Description:*** The NWC is a joint DoD and Department of Energy (DOE)/National Nuclear Security Administration (NNSA) organization established by Congress to facilitate cooperation and coordination between the two Departments as they fulfill their dual agency responsibilities for U.S. nuclear weapons stockpile management. ***FY 2024 Plans:*** - Drive the activities on the statutorily-required Joint DoD-DOE NWC and its support committees to include the Nuclear Weapons Council Standing and Safety Committee, the Compartmented Advisory Committee, the Action Officer group, as well as newly formed working groups related to advanced capabilities, budget certification, and aeroshells. ***FY 2025 Plans:***	0.825	0.845	0.842

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605161D8Z / *Nuclear Matters-Physical Security*	**Project (Number/Name)** 161 / *Nuclear Matters*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Drive the activities on the statutorily-required Joint DoD-DOE NWC and its support committees to include the Nuclear Weapons Council Standing and Safety Committee, the Compartmented Advisory Committee, the Action Officer group, as well as newly formed working groups related to advanced capabilities, budget certification, and aeroshells. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There are no significant changes between FY 2024 and FY 2025.			
Title: Nuclear Forensics, Resiliency, and Survivability ***Description:*** Per National Security Presidential Memorandum 35, the DoD leads the United States Government (USG) National Technical Nuclear Forensics (NTNF) post-detonation collection and analysis capability. Per DoD Directive S-2060.04, the Office of the Undersecretary of Defense for Acquisition & Sustainment (OUSD(A&S)) is the office responsible for developing and leading DoD's NTNF capabilities. Collecting and analyzing post-detonation debris is critical to ensure the USG can identify the source of nuclear material and holding those responsible for an attack accountable is critical to our national defense and security. Internal and independent assessments indicate new capabilities are needed to sustain an effective deterrent against nuclear attack and meet the challenges of future threats. ***FY 2024 Plans:*** - Invest in nuclear forensics, survivability, and resiliency requirements to address DoD and nuclear enterprise needs. - Exercise DoD collection and analysis including exercises with the full USG NTNF capability to demonstrate USG resolve adding to our strategic deterrence. ***FY 2025 Plans:*** - Invest in nuclear forensics, survivability, and resiliency requirements to address DoD and nuclear enterprise needs. - Exercise DoD collection and analysis including exercises with the full USG NTNF capability to demonstrate USG resolve adding to our strategic deterrence. - Complete OCONUS NTNF collection concept of operations. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There are no significant changes between FY 2024 and FY 2025.	0.515	0.868	0.864
Title: Nuclear Surety ***Description:*** Because of their political and military importance, destructive power, and the potential consequences of an accident or unauthorized act, nuclear weapons and nuclear weapon systems require special consideration--nuclear surety-- and must be protected against risks and threats inherent in their peacetime and wartime environments. Oversight of the DoD nuclear surety program is provided by the Deputy Assistant Secretary of Defense for Nuclear Matters.	0.752	1.056	1.052

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605161D8Z / *Nuclear Matters-Physical Security*	**Project (Number/Name)** 161 / *Nuclear Matters*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: - Conduct OSD oversight and provide direction for actions taken under DoDI 4540.05,Transportation of U.S. Nuclear Weapons; DoDD S-5210.81, United States Nuclear Weapons Command and Control, Safety, and Security; DoDI S-3150.07, Controlling the Use of Nuclear Weapons and DoDI S-5210.82, Protection Nuclear Weapons Coding Equipment; DoDI 5210.42, Nuclear Weapons Personnel Reliability Assurance and DoDM 5210.42, Nuclear Weapons Personnel Reliability Program; and DoDD 5210.41, Security Policy for Protecting Nuclear Weapons, DoDI O-5210.63, DoD Procedures for Security of Nuclear Reactors and Special Nuclear Materials, and DoD S-5210.92M, Physical Security for Nuclear Command and Control (NC2) Facilities. - Address cybersecurity, supply chain, and emerging threats from degrading the execution of mission critical functions as it pertains to the safety, security and control of nuclear weapons and nuclear weapon systems. ***FY 2025 Plans:*** - Conduct OSD oversight and provide direction for actions taken under DoDI 4540.05,Transportation of U.S. Nuclear Weapons; DoDD S-5210.81, United States Nuclear Weapons Command and Control, Safety, and Security; DoDI S-3150.07, Controlling the Use of Nuclear Weapons and DoDI S-5210.82, Protection Nuclear Weapons Coding Equipment; DoDI 5210.42, Nuclear Weapons Personnel Reliability Assurance and DoDM 5210.42, Nuclear Weapons Personnel Reliability Program; and DoDD 5210.41, Security Policy for Protecting Nuclear Weapons, DoDI O-5210.63, DoD Procedures for Security of Nuclear Reactors and Special Nuclear Materials, and DoD S-5210.92M, Physical Security for Nuclear Command and Control (NC2) Facilities. - Address cybersecurity, supply chain, and emerging threats from degrading the execution of mission critical functions as it pertains to the safety, security and control of nuclear weapons and nuclear weapon systems. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There are no significant changes between FY 2024 and FY 2025.			
Title: Nuclear Incident Response and North Atlantic Treaty Organization (NATO) and International Nuclear Programs	0.350	0.375	0.373
Description: In accordance with Presidential Policy Directive 35, US Nuclear Weapons Command and Control, Safety and Security and the DoD implementer, DoDD S-5210.81, the DoD will establish policy on nuclear weapons procedures for responding to U.S. nuclear weapons accidents and incidents and serve as the technical advisor to the Secretary of Defense in the event of a nuclear accident or incident. Coordinates with other U.S. Government Agencies and allies to ensure their standards complement DoD efforts for responding to accidents and incidents. Regularly consult with NATO allies through the High Level Group, which is the senior advisory body to the NATO Nuclear Planning Group, consisting of subject matter experts and supporting the Assistant Secretary of Defense for nuclear, Chemical and Biological Defense in their role as Vice-Chair of the HLG. The HLG is comprised of national policy makers and experts from Allied partners.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605161D8Z / *Nuclear Matters-Physical Security*	**Project (Number/Name)** 161 / *Nuclear Matters*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The United States participates in several international programs of cooperation regarding nuclear weapons with foreign governments and regional defense organizations that involve unclassified and classified information exchanges. In general, these agreements are designed to promote safety and security, advance stockpile stewardship, and collaborate in counter-proliferation efforts. ***FY 2024 Plans:*** - Serve as Chair of the Nuclear Weapons Accident and Incident Subcommittee tasked in Federal response plans and national directives with the responsibility to coordinate and execute U.S. nuclear weapons incident and accident response policy. - Coordinate overseas nuclear weapon storage and deployment issues with the Department of State, Combatant Commands, Services, and other DoD organizations. - Conduct Nuclear Weapon Incident Exercises for the DoD, in coordination and cooperation with other U.S. Government Agencies (to include state/local/tribal) and NATO Partners. - Confidence building programs of cooperation with international partners through tri and bi-lateral annual, bi-annual, semi-annual, and monthly engagements under Mutual Defense Agreements. - Sponsor international partners at national-level nuclear weapons accident/incident exercises, workshops, render safe exercises through tri-lateral engagements under Mutual Defense Agreements. ***FY 2025 Plans:*** - Serve as Chair of the Nuclear Weapons Accident and Incident Subcommittee tasked in Federal response plans and national directives with the responsibility to coordinate and execute U.S. nuclear weapons incident and accident response policy. - Coordinate overseas nuclear weapon storage and deployment issues with the Department of State, Combatant Commands, Services, and other DoD organizations. - Conduct Nuclear Weapon Incident Exercises for the DoD, in coordination and cooperation with other U.S. Government Agencies (to include state/local/tribal) and NATO Partners. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There are no significant changes between FY 2024 and FY 2025.			
Title: Stockpile Planning and Decision Making ***Description:*** To meets its security needs and those of its allies, the U.S. will need a safe, secure, and reliable nuclear deterrent for the foreseeable future. There's increased risk, absent nuclear testing, in assuring long-term safety and reliability of today's aging stockpile—the legacy warheads left over from the Cold War. Today's nuclear weapons enterprise is not sufficiently responsive to technical problems in the stockpile, or to potential emerging threats. The task is to ensure the U.S. nuclear weapons stockpile and supporting infrastructure, meets long-term national security needs.	2.155	2.450	2.259

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605161D8Z / *Nuclear Matters-Physical Security*	**Project (Number/Name)** 161 / *Nuclear Matters*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: - Conduct life cycle activities in support of the nuclear weapons stockpile under DoDD 3150.01, Joint DoD-DOE/NNSA Nuclear Weapon Life-Cycle Activities and DoDM 5030.55, DoD Procedures for Joint DoD-DOE Nuclear Weapons Life Cycle Activities. - Manage DoD RDT&E activities for nuclear warheads to include B61, W76, W78, W80, B83, W87, W88 Weapons. - Support studies for warhead replacement. ***FY 2025 Plans:*** - Conduct life cycle activities in support of the nuclear weapons stockpile under DoDD 3150.01, Joint DoD-DOE/NNSA Nuclear Weapon Life-Cycle Activities and DoDM 5030.55, DoD Procedures for Joint DoD-DOE Nuclear Weapons Life Cycle Activities. - Manage DoD RDT&E activities for nuclear warheads to include B61, W76, W78, W80, B83, W87, W88 Weapons. - Support studies for warhead replacement. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There are no significant changes between FY 2024 and FY 2025.			
Title: Nuclear Matters Technical Support ***Description:*** Support to Nuclear Matters includes the following: - Managing the operational, technical, and administrative support for the NWC and its subordinate bodies for a safe, secure, effective, and credible nuclear deterrent. - Developing and coordinating all reports to the President and Congress as mandated by public law including the Report on Stockpile Assessments, Nuclear Weapons Stockpile Memorandum, NWC Certification of the NNSA Budget, Nuclear Weapons Stockpile Report, Joint Surety Report. Stockpile Stewardship and Management Plan, and Report on Platform Assessment. - Developing technical content for briefings, reports, and decision letters; guides documents through coordination; and resolves issues within and between the agencies. - Maintaining official records of NWC and subordinate body proceedings and other official documents. - Address Original Classification Authority requirements for Formally Restricted Data. - Reviewing and documenting Freedom of Information Act and Mandatory Declassification Requests (Annual average of over 500 nuclear-related requests). ***FY 2024 Plans:*** - Manage the operational, technical, and administrative support for the NWC and its subordinate bodies for a safe, secure, effective, and credible nuclear deterrent. - Submit annual reports to the President and the Congress. - Oversee DoD/DOE relationship regarding the survivability and surety of the national nuclear stockpile.	4.588	4.670	4.651

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605161D8Z / *Nuclear Matters-Physical Security*	**Project (Number/Name)** 161 / *Nuclear Matters*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Serve as DoD Sigma 15 Approval Authority (Interface with DOE/NNSA). - Address Original Classification Authority requirements for Formally Restricted Data. - Address Freedom of Information Act and Mandatory Declassification Requests. ***FY 2025 Plans:*** - Manage the operational, technical, and administrative support for the NWC and its subordinate bodies for a safe, secure, effective, and credible nuclear deterrent. - Submit annual reports to the President and the Congress. - Oversee DoD/DOE relationship regarding the survivability and surety of the national nuclear stockpile. - Serve as DoD Sigma 15 Approval Authority (Interface with DOE/NNSA). - Address Original Classification Authority requirements for Formally Restricted Data. - Address Freedom of Information Act and Mandatory Declassification Requests. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There are no significant changes between FY 2024 and FY 2025.			
Title: Research and Development Oversight, Risk Management, and PPBE Support	3.743	3.965	3.948
Description: This support addresses program management, evaluation, and resourcing functions associated with the Physical Security Enterprise & Analysis Group (PSEAG), the Security Policy Verification Committee, and Nuclear Forensics, Resilience and Survivability programs. This support also includes Planning, Programming, Budgeting and Execution (PPBE) for the Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs and the Office of the Deputy Assistant Secretary of Defense for Nuclear Matters. ***FY 2024 Plans:*** - Assist Nuclear Matters identify, capture, and track integrated risks, as well as aggregate or cumulative technical, geopolitical, operational, and programmatic risks associated with the nuclear enterprise, to include sustainment, modernization, and future planning. - Assist with coordinating, planning and executing nuclear and conventional physical security development, test, evaluation and deployment of projects executed by the Military Departments by ensuring joint capability gaps are identified and to avoid duplication of effort across the DoD to maximize use of limited funds. - Assist Nuclear Matters and the PSEAG pursue a joint-layered defense approach to Counter-Uncrewed Systems (C-UxS) by integrating sensors and systems into physical security architectures and command and control systems to address this threat. - Coordinate efforts across the DoD, interagency and international partners to develop C-UxS solutions to detect, track, identify, and defeat that support valid requirements while eliminating duplication of effort, pursuing the use of government and commercial off-the-shelf (GOTS/COTS) products, ensuring systems integration, and promoting interoperability and sustainability.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605161D8Z / *Nuclear Matters-Physical Security*	**Project (Number/Name)** 161 / *Nuclear Matters*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Support all phases of the PPBE process and meet all mandated timelines for submission of related documents; contribute to the development of PPBE policy guidance for OASD(NCB); providing programmatic, business, financial, and policy assessments to the OASD(NCB); Maintaining and updating OASD(NCB) related funding profiles in official DoD financial databases and systems. ***FY 2025 Plans:*** - Assist Nuclear Matters identify, capture, and track integrated risks, as well as aggregate or cumulative technical, geopolitical, operational, and programmatic risks associated with the nuclear enterprise, to include sustainment, modernization, and future planning. - Assist with coordinating, planning and executing nuclear and conventional physical security development, test, evaluation and deployment of projects executed by the Military Departments by ensuring joint capability gaps are identified and to avoid duplication of effort across the DoD to maximize use of limited funds. - Assist Nuclear Matters and the PSEAG pursue a joint-layered defense approach to Counter-Uncrewed Systems (C-UxS) by integrating sensors and systems into physical security architectures and command and control systems to address this threat. - Coordinate efforts across the DoD, interagency and international partners to develop C-UxS solutions to detect, track, identify, and defeat that support valid requirements while eliminating duplication of effort, pursuing the use of government and commercial off-the-shelf (GOTS/COTS) products, ensuring systems integration, and promoting interoperability and sustainability. - Support all phases of the PPBE process and meet all mandated timelines for submission of related documents; contribute to the development of PPBE policy guidance for OASD(NCB); providing programmatic, business, financial, and policy assessments to the OASD(NCB); Maintaining and updating OASD(NCB) related funding profiles in official DoD financial databases and systems. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There are no significant changes between FY 2024 and FY 2025.			
Title: Failsafe and Risk Reduction ***Description:*** Congressional tasking under FY 2022 National Defense Authorization Act section 1644 directed, that for all “covered nuclear systems” of the United States: (1) Nuclear weapon systems, (2) the Nuclear Command, Control, and Communications System, and (3) the Integrated Tactical Warning/Attack Assessment system that a study was needed to a) conduct an independent review of the safety, security, and reliability of covered nuclear systems, and b) ensure the review is conducted in a manner similar to the (1991-92) review conducted by the Federal Advisory Committee on Nuclear Failsafe and Risk Reduction.	2.331	-	-
Accomplishments/Planned Programs Subtotals	17.370	21.043	19.871

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605161D8Z / *Nuclear Matters-Physical Security*	**Project (Number/Name)** 161 / *Nuclear Matters*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605170D8Z / *Support to Networks and Information Integration (NII)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	103.169	9.103	10.504	8.580	-	8.580	8.049	8.009	8.179	8.342	Continuing	Continuing
170: *Support to NII*	103.169	9.103	10.504	8.580	-	8.580	8.049	8.009	8.179	8.342	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to deter aggression, defend the homeland, and build sustainable and long-term advantage.

Support to networks and information integration (NII) program supports the military Global Positioning System (GPS) user equipment (MGUE) modernization and synchronization with GPS space and operational control segments to oversee GPS management and planning activities to meet Joint Capabilities Integration and Development System (JCIDS) requirements. The NII program also supports alternative positioning, navigation, and timing (PNT) capability policy and guidance to augment GPS. Additionally, the program supports the DoD's PNT Oversight Council and interagency activities under the National Space-Based PNT Executive Committee and related electromagnetic spectrum (EMS) enterprise activities.

In support of the National Defense Strategy, resilient PNT and GPS services provide the joint force and key U.S. allies with a battlespace PNT advantage. Resilient PNT provides enhanced lethality through precision targeting, exacting intelligence, surveillance, and reconnaissance (ISR), efficient logistics, blue force tracking, and other force enhancements employed by the joint force, U.S. allies, and coalition partners. The joint force is modernizing PNT capabilities to use the new GPS M-code signal and incorporate alternative PNT information via a modular open systems approach (MOSA) to reduce legacy systems dependency.

The integrated planning and management project encompasses the National Leadership Command Capabilities Management Office's (NMO) responsibilities to establish national command capabilities development, interoperability, standards, and architecture policy and oversight. The NMO serves as the DoD's policy, long-range plans, programs and budget, integrated mission advocacy, and decision-maker capabilities point of contact. NMO's objective is to ensure capabilities are in place to provide complete and timely situational awareness and decision tools for senior decision-makers. Additionally, the NMO assists the DoD CIO, as the executive agent and primary White House Military Office OSD advocate, to oversee the wide range of DoD command, control, and communications (C3) assets and military department, defense agency, and field activity critical and sensitive C3 capabilities design, integration, and deployment. Two overall focus areas include: 1) national senior leader C3 systems, national security/emergency preparedness (NS/EP), DoD support to civil authorities; continuity of government (COG); 2) cyber mission indications and warnings.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605170D8Z / *Support to Networks and Information Integration (NII)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	9.449	10.504	8.650	-	8.650
Current President's Budget	9.103	10.504	8.580	-	8.580
Total Adjustments	-0.346	0.000	-0.070	-	-0.070
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.346	-			
• Program Adjustments	-	-	-0.070	-	-0.070

Change Summary Explanation

FY 2024 program adjustments due to re-phasing based on prior year execution balances.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Support to Networks and Information Integration (NII)	9.103	10.504	8.580
FY 2024 Plans: Oversee GPS/PNT management and planning activities to meet warfighter requirements. Manage DoD PNT Oversight Council activities, supporting structure, and support the National Space-Based PNT Executive Committee. Support activities include: - Manage the PNT Security manual (DoDM-O4650.11). - Continue implementing the GPS protection profile matrix from navigation warfare (NAVWAR) concept of operations in conjunction with warfighting operation plans (OPLANs) and concept plans (CONPLANs) in coordination with U.S. Space Command (USSPACECOM). - Manage the PNT Navigation Warfare instruction (DoDI 4650.08) and all OPLAN and CONPLAN annexes, in coordination with U.S. Strategic Command (USSTRATCOM). - Manage National Airspace System activities affecting PNT with the U.S. Air Force and Federal Aviation Administration. Continue implementing Red Key Sundown policy. - Provide staff support, perform research, and conduct studies as directed by the Deputy Secretary of Defense in her role as the National Space-Based PNT Executive Committee co-chair and for DoD CIO in his role as co-chair of the Space-Based PNT Executive Steering Group, including EMS access activities. - Apply NAVWAR concepts of operation via the Joint Navigation Warfare Center and USSPACECOM to develop doctrine, tactics, techniques and procedures, training, equipment validation, and material solutions to the military departments and combatant commanders, addressing NAVWAR challenges defined in OPLAN and CONPLAN scenarios.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605170D8Z / *Support to Networks and Information Integration (NII)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Provide oversight and guidance on the DoD PNT investment strategy to ensure PNT material solutions development are synchronized in JCIDS, the Defense Acquisition System, and the planning, programming, budgeting, and execution process. - Implement PNT and NAVWAR policy instructions, PNT systems compliance with NAVWAR requirements and PNT Security manual. - Analyze and promote alternative PNT delivery to include in the force protection structure. Assist developing MOSA standards to field alternative PNT and develop alternative PNT modeling and simulation tools. - Task the intelligence community to assess GPS threat vectors and other PNT delivery means; conduct operational assessments to reveal gaps in PNT delivery against OPLANs and CONPLANs; and refresh PNT equipment maintenance. - Develop directives, instructions, and manuals to implement the PNT Strategy within the Department. - Continue special tasks directed by DoD CIO to accelerate development and fielding of advanced GPS receivers in the joint force. - Maintain and update existing GPS receiver equipment inventory, to include antennae, antennae electronics, and PNT delivery via other-than-GPS equipment. - Address prioritized platforms in fielding plans and guidance to military departments. - Develop MGUE “roadmap” illustrating necessary joint force fielding milestones. - Administer the PNT Oversight Council and PNT Executive Management Board within DoD via supporting directives and instructions, meeting agendas and minutes, task disposition and the PNT Oversight Council annual report. Chair and manage subordinate PNT and NAVWAR working groups. - Address North Atlantic Treaty Organization (NATO) PNT interoperability via standardization agreements, allied navigation plans, and associated documentation in the Navigation/Identification Capability Panel (CaP-2) under the NATO Consultation, Command, and Control Board direction. Ensure complementary allied equipage and planning based on U.S. Air Force GPS development, open systems architecture development, and foreign PNT systems and capabilities. - Ensure cybersecurity of all DoD PNT enterprise elements. Assist other federal departments and agencies, as required. Provide oversight and guidance on maritime information systems (MIS) and submarine fiber optic cables (SFOC) and associated infrastructure. These activities encompass requirements analysis, identifying communications capability shortfalls and interoperability issues, assessing equipment performance issues, and exploring future communications improvements. This includes technical expertise and systems engineering expertise in support of MIS and SFOC capabilities acquisition, planning, procurement, installation, operations, and sustainment. Provide senior leader C3 systems and platforms technical expertise and oversight, including White House, Secretary of Defense, Chairman of the Joint Chiefs of Staff, and other senior leader fixed and mobile communications capabilities. These activities			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605170D8Z / *Support to Networks and Information Integration (NII)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
consolidate senior leader operational mission requirements, identify communications capability shortfalls and interoperability issues, assess equipment performance issues, and explore future communications improvements. ***FY 2025 Plans:*** Continue base program initiatives from prior budget year. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 decrease is due to research and technical assessment reductions that inform DoD CIO on new operational, policy, and technology concepts. The decrease will also scale down capability assessments that guide the portfolio's sustainment, modernization, and optimization. The portfolio includes mission applications, services, communications transport (terrestrial, aerial, and satellite-based) systems, information sharing, PNT, cloud computing, and computing network capabilities across the full spectrum of DoD operations			
Accomplishments/Planned Programs Subtotals	9.103	10.504	8.580

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605200D8Z / *General Support to OUSD(Intelligence and Security)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	10.451	16.112	2.980	3.155	-	3.155	3.478	3.545	3.814	3.890	Continuing	Continuing
200: *General Support to USDI*	10.451	16.112	2.980	3.155	-	3.155	3.478	3.545	3.814	3.890	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland, Build Sustainable and Long-Term Advantage, and Taking Care of People. The program is required to fund I&S innovation capabilities and RDT&E analysis & assessments that enable our oversight responsibilities. Some initiatives span multiple fiscal years, whereas some are one-time initiatives.

Funding supports multiple security research activities focused on technology development, automation, and modernization of capabilities across the Defense Security Enterprise, including Personnel Vetting, Physical Security, Industrial Security, and Critical Technology Protection. Activities also include proof of concept and application development related to enabling process improvement, efficiencies, and innovation.

Security Activities focus on technology development, automation, and modernization of capabilities across the Defense Security Enterprise, including Personnel Vetting, Physical Security, Industrial Security, and Critical Technology Protection. Activities also include proof of concept and application development related to enabling process improvement, efficiencies, and innovation.

Global Operations and Integration (GOI) requires expert engineering and technical assessments on a wide range of classified ISR capabilities that directly support National Defense Strategy (NDS) priorities. Develops and sustains technical knowledge while cultivating relationships within the special ISR capabilities community, including the InterAgency, necessary to inform DoD-level policy decisions and oversight and enable successful implementation in accordance with 2022 NDS priorities and objectives. In addition, senior-level education is provided for a better understanding to make informed decisions on ISR operations related initiatives, platforms, sensors, and force structure. Establishes and assesses oversight of the DoD ISR enterprise. Evaluates ISR enterprise performance and effectiveness in terms of strategic sufficiency and alignment to the NDS and monitor allied and partner ISR contributions. Provides expertise on matters of technical collection and operational employment. Provides ISR guidance, counsel, and options to national leaders on improving the near-term efficiency and effectiveness of ISR capabilities by spearheading the expedited delivery of ISR systems, technologies, policies, and processes in support of warfighter operations around the globe. This PE also supports the NDS line of effort to build a more lethal force by conducting research and evaluation of global ISR topics to modernize key capabilities, the NDS defense objective of establishing an unmatched twenty-first century National Security Innovation Base that effectively supports Department operations and sustains security and solvency, and the NDS strategic approach of reforming the Department’s business processes by simultaneously increasing performance and affordability while still minimizing risk.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605200D8Z / *General Support to OUSD(Intelligence and Security)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	11.112	2.980	3.180	-	3.180
Current President's Budget	16.112	2.980	3.155	-	3.155
Total Adjustments	5.000	0.000	-0.025	-	-0.025
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.000	-			
• SBIR/STTR Transfer	-	-			
• Department Adjustment	-	-	-0.025	-	-0.025

Change Summary Explanation

No significant change.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605200D8Z / *General Support to OUSD(Intelligence and Security)*	Project (Number/Name) 200 / *General Support to USDI*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
200: *General Support to USDI*	10.451	16.112	2.980	3.155	-	3.155	3.478	3.545	3.814	3.890	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Security Activities focus on technology development, automation, and modernization of capabilities across the Defense Security Enterprise, including Personnel Vetting, Physical Security, Industrial Security, and Critical Technology Protection. Activities also include proof of concept and application development related to enabling process improvement, efficiencies, and innovation.

GOI requires expert engineering and technical assessments on a wide range of classified ISR operational capabilities that directly support NDS priorities. In addition, senior-level education is provided for a better understanding to make informed decisions on ISR operations related initiatives, platforms, sensors, and force structure. Establishes and assesses oversight of the DoD ISR enterprise. Evaluates ISR enterprise performance and effectiveness in terms of strategic sufficiency and alignment to the NDS and monitor allied and partner ISR contributions. Provides expertise on matters of technical collection and operational employment. Provides ISR guidance, counsel, and options to national leaders on improving the near-term efficiency and effectiveness of ISR capabilities by spearheading the expedited delivery of ISR systems, technologies, policies, and processes in support of warfighter operations around the globe. This PE supports the National Defense Strategy's (NDS) line of effort to build a more lethal force by conducting research and evaluation of global ISR topics to modernize key capabilities, the NDS defense objective of establishing an unmatched twenty-first century National Security Innovation Base that effectively supports Department operations and sustains security and solvency, and the NDS strategic approach of reforming the Department's business processes by simultaneously increasing performance and affordability while still minimizing risk.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: General Spt to USDI	16.112	2.980	3.155
Description: Funding supports multiple security research activities focused on technology development, automation, and modernization of capabilities across the Defense Security Enterprise, including Personnel Vetting, Physical Security, Industrial Security, and Critical Technology Protection. Activities also include proof of concept and application development related to enabling process improvement, efficiencies, and innovation. In FY 2023, OUSD(I&S) initiated a project focused on modernizing and digitizing the management and protection of classified information. Investments include the development of artificial intelligence (AI) and Natural Language Processing (NLP) capabilities, implementation and acquisition strategy for tools and solutions that can modernize oversight and declassification across the DoD, and assessment, evaluation, and user studies to identify specific declassification solution/capability needs in DoD. OUSD(I&S) initiated the Reimagining Polygraph project to identify, develop, and enhance technologies in support of credibility			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605200D8Z / *General Support to OUSD(Intelligence and Security)*	**Project (Number/Name)** 200 / *General Support to USDI*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
assessments (CA); design tradecraft for the effective and objective use of these technologies; and provide a viable path forward to integrate and deploy these technologies in support of the DoD mission. GOI requires expert engineering and technical assessments on a wide range of classified ISR operational capabilities that directly support NDS priorities. In addition, senior-level education is provided for a better understanding to make informed decisions on ISR operations related initiatives, platforms, sensors, and force structure. ***FY 2024 Plans:*** Security Activities will continue to provide technology development and concept evaluation for applications in support of OUSD(I&S). New research projects are being initiated to support research into the security and intelligence implications and applications of classified cloud computing and cloud-based technologies and the use of DoD grant data to support research protection efforts. OUSD(I&S) will continue efforts focused on declassification and reimagining polygraph. GOI will continue to provide expert engineering and technical assessments on a wide range of classified ISR operational capabilities that directly support NDS priorities. Funds will support senior-level education and understanding to inform decisions on ISR operations related initiatives, platforms, sensors, and force structure. ***FY 2025 Plans:*** Security Activities will continue to provide technology development and concept evaluation for applications in support of OUSD(I&S). New research projects are being initiated to support research into the security and intelligence implications and applications of classified cloud computing and cloud-based technologies and the use of DoD grant data to support research protection efforts. OUSD(I&S) will continue efforts focused on declassification and reimagining polygraph. GOI will continue to provide expert engineering and technical assessments on a wide range of classified ISR operational capabilities that directly support NDS priorities. Funds will support senior-level education and understanding to inform decisions on ISR operations related initiatives, platforms, sensors, and force structure ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605200D8Z / *General Support to OUSD(Intelligence and Security)*	**Project (Number/Name)** 200 / *General Support to USDI*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
No significant change.			
Accomplishments/Planned Programs Subtotals	16.112	2.980	3.155

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The contracting strategy follows guidance outlined in the DoD 5000 series directives, Federal Acquisition Regulations (FAR), and Defense Federal Acquisition Regulations (DFAR).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605502D8Z / *Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	235.106	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
500: *STTR*	0.000	235.106	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Note

New Start (Y/N): No

Funding is incorrect in NGRMS R-1. All funding was placed in Project 500, Small Bus Technology Transfer, however the correct break-out at project level is as follows:
Project 500 - Small Bus Technology Transfer $28.986
Project 502 - Small Bus Innovation Research $133.753
Project 503 - SBIR CR Program $60.000
Project 504 - SBIR CRP Administration $2.061
Project 505 - SBIR ADMIN $6.184
Project 506 - SBIR DUE DILIGENCE $4.122

A. Mission Description and Budget Item Justification

DoD Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs are designed to provide small, high-tech businesses opportunities to propose innovative ideas and solutions in response to technological challenges posed by the DoD Components that will address existing and emerging national security threats and to develop new military capabilities. The SBIR and STTR programs are critical pathways for the Department to tap the innovation of America's small business community and research institutions to support development of cutting-edge technologies that will increase the readiness, modernization and lethality of the Joint Force.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	235.106	0.000	0.000	-	0.000
Total Adjustments	235.106	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	235.106	-			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605502D8Z *I Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)*

Change Summary Explanation

Funds are allocated from other Office of the Secretary of Defense (OSD) Research, Development, Test, and Evaluation (RDT&E) programs and select Defense Agencies to support the SBIR and STTR programs as defined in 15 U.S.C. 638 (f) and (n).

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605502D8Z / *Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)*	Project (Number/Name) 500 / *STTR*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
500: *STTR*	0.000	235.106	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Due to an error in NGRMS, Funding in this project is incorrectly displayed. The correct funding is $28.986 million

A. Mission Description and Budget Item Justification

The goals of the OSD Small Business Technology Transfer (STTR) program is to stimulate a partnership of ideas between small business concerns (SBCs) and research institutions through DoD funded research or research and development (R/R&D). By providing awards to SBCs or cooperative R/R&D efforts with research institutions, DoD supports innovation and economic growth to generate decisive and sustained U.S. military advantages. This program supports high priority projects within the DoD Components, their missions, and the Warfighter.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: STTR	235.106	-	-
Description: The set-aside program that funds cooperative R/R&D projects for small businesses in partnership with research institutions. The STTR program contributed to the readiness and modernization of the Joint Force and improved operational capabilities through the innovative research topics initiated in FY 2023 in the following areas: OSD-NGA: - Multi-Scale Representation Learning, develop a single neural network that learns representations at multiple spatial and semantic scales and that may be applied to different geospatial tasks, such as land cover segmentation, object detection, key-point matching, and few-shot/fine-grained/long-tailed classification. TECHNOLOGY AREA(S): Artificial Intelligence/Machine Learning; Information Systems; Modeling and Simulation Technology - Environmental Security Risk Forecasting, develop computer models to forecast risk to U.S. critical infrastructure from a range of potential climate futures. During Phase I, research will be restricted to modeling past and forecasting future wildfire potential in a chosen area containing critical infrastructure. TECHNOLOGY AREA(S): Artificial Intelligence/Machine Learning; Statistical Forecasting; Information Systems; Modeling and Simulation Technology Emerging results from these STTR topics will be reported in FY 2024.			
Accomplishments/Planned Programs Subtotals	235.106	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605502D8Z / *Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)*	**Project (Number/Name)** 500 / *STTR*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605711D8Z / *Critical Technology Analysis*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	11.422	-	11.422	11.683	11.921	12.189	12.434	Continuing	Continuing
892: *Critical Technology Analysis*	0.000	0.000	0.000	11.422	-	11.422	11.683	11.921	12.189	12.434	Continuing	Continuing

Note

New Start (Y/N): No

In FY 2025, funding transferred from Defense Technology Analysis - PE 0605798D8Z Project 797.

A. Mission Description and Budget Item Justification

The Critical Technology Analysis (CTA) program funds engineering, scientific, and analytical support for the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) and specifically the Office of the Assistant Secretary of Defense for Critical Technologies – (OASD(CT)). The OASD(CT) supports the USD(R&E) by prioritizing the National Defense Strategy modernization lines of effort in order to maintain competitive advantage against adversaries. The efforts funded in this project directly support the OASD(CT) organization and are critical to developing and continuously updating research and technology development roadmaps as required by Section 217 of the National Defense Authorization Act for fiscal year 2021.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	11.422	-	11.422
Total Adjustments	0.000	0.000	11.422	-	11.422
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Transfer/Realignment	-	-	11.515	-	11.515
• Program Adjustments	-	-	-0.093	-	-0.093

Change Summary Explanation

The FY 2025 increase of $11.515 million is the result of a realignment from the Defense Technology Analysis, PE 0605798D8Z project 797. Funding will go to mission support, roadmap studies, and priorities for the OASD(CT).

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605711D8Z *I Critical Technology Analysis*

Program Adjustments are as follows - (A reduction of $0.115 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.

Funding increase of $0.022 million for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605711D8Z / *Critical Technology Analysis*	Project (Number/Name) 892 / *Critical Technology Analysis*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
892: *Critical Technology Analysis*	0.000	0.000	0.000	11.422	-	11.422	11.683	11.921	12.189	12.434	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

In FY 2025, funding transferred from Defense Technology Analysis - PE 0605798D8Z Project 797.

A. Mission Description and Budget Item Justification

The Critical Technology Analysis (CTA) program funds engineering, scientific, and analytical support for the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) and specifically the Office of the Assistant Secretary of Defense for Critical Technologies – (OASD(CT)). The OASD(CT) supports the USD(R&E) by prioritizing the National Defense Strategy modernization lines of effort in order to maintain competitive advantage against adversaries. The efforts funded in this project directly support the OASD(CT) organization and are critical to developing and continuously updating research and technology development roadmaps as required by Section 217 of the National Defense Authorization Act for fiscal year 2021.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Critical Technology Analysis	-	-	11.422
Description: The OASD(CT) is responsible for developing the Department's roadmap efforts in the fourteen critical technology areas: Directed Energy, Hypersonics, Integrated Sensing and Cyber, Trusted AI & Autonomy, Integrated Sensing & Cyber, Microelectronics, Space Technology, Renewable Energy Generation & Storage, Advanced Computing & Software, Human-Machine Interfaces, Advanced Materials, Biotechnology, Quantum, and Future G. Identification of leading edge technology is critical in delivering capability to the warfighter and maintaining the competitive advantage. Funding for research, technical analysis and management, and other advanced research methods will allow for success in identifying game changing technology investments for the Department's modernization efforts.			
FY 2025 Plans: Adversary and competitor actions seek to disrupt and diminish the United States' advantages. Advancement of research and development in the modernization priorities will enhance the United States' competitive advantage. The Department will conduct analysis and research studies to support updates to and advancements of modernization roadmaps synchronized with related priorities. Focus areas include the emerging technology industrial base and the workforce, including universities. The studies and analyses conducted will focus not only on closing gaps and identifying overlap, but providing leap-ahead capabilities across all critical technology areas. In addition to the critical technology areas analysis and roadmap studies, the funding executed for this			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605711D8Z / *Critical Technology Analysis*	**Project (Number/Name)** 892 / *Critical Technology Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
project will substantially enhance mission support capabilities for the OASD(CT), providing a boost to the OASD(CT) foundation and ultimately aiding in supporting the technical advantage of the Warfighter. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $11.422 million is due to a realignment from Defense Technology Analysis, PE 0605798D8Z, Project 797. Funding will go to mission support, roadmap studies, and priorities for the OASD(CT).			
Accomplishments/Planned Programs Subtotals	-	-	11.422

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605790D8Z *I Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	3.820	3.831	5.346	-	5.346	5.427	5.510	5.598	5.680	Continuing	Continuing
518: *SBIR Challenge Admin*	-	3.820	3.831	5.346	-	5.346	5.427	5.510	5.598	5.680	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build Sustainable and Long-Term Advantage, and Taking Care of People.

This program element (PE) provides funding for the administration of the Defense Small Business Innovation Research (SBIR) program and the Small Business Technology Transfer (STTR) program. The authority to establish SBIR and STTR programs is codified in 15 U.S.C. 638. The statutory goals of the programs are to stimulate technological innovation, meet federal research and development (R&D) needs, foster and encourage participation in innovation and entrepreneurship by women and socially or economically disadvantaged persons, and increase private sector commercialization of innovations from federal R&D funding. In addition, the STTR program aims to foster technology transfer through cooperative R&D between small businesses and research institutions.

The DoD SBIR/STTR programs set-aside almost two billion dollars annually defense-wide to competitively fund scientific and technical innovation to specifically address the National Defense Strategy (NDS) modernization priorities and the mission needs of participating DoD components. The DoD components participating in the SBIR/STTR programs include: Army, Navy, Air Force, Defense Advanced Research Projects Agency (DARPA), Missile Defense Agency (MDA), Defense Threat Reduction Agency (DTRA), U.S. Special Operations Command (SOCOM), Joint Science & Technology Office for Chemical & Biological Defense (CBD), National Geospatial-Intelligence Agency (NGA), Defense Logistics Agency (DLA), Defense Microelectronics Activity (DMEA), Defense Health Agency (DHA), Strategic Capabilities Office (SCO), Defense Human Resources Activity (DHRA), Space Development Agency (SDA), and the Office of Secretary of Defense (OSD).

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605790D8Z *I Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	3.820	3.831	3.889	-	3.889
Current President's Budget	3.820	3.831	5.346	-	5.346
Total Adjustments	0.000	0.000	1.457	-	1.457
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	1.446	-	1.446
• Economic Assumptions	-	-	0.011	-	0.011

Change Summary Explanation

Increase $1.446 million in FY 2025 is due to a $1.500 million realignment from PE 0603527D8Z to support SBIR Challenge Admin and a reduction of $0.054 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.011 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605790D8Z / *Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR)*	Project (Number/Name) 518 / *SBIR Challenge Admin*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
518: *SBIR Challenge Admin*	-	3.820	3.831	5.346	-	5.346	5.427	5.510	5.598	5.680	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Small Business Innovation Research (SBIR) program and the Small Business Technology Transfer (STTR) programs are highly competitive programs that encourage domestic small businesses to engage in federal research, development, test and evaluation (RDT&E) with the potential for commercialization. Through a competitive awards-based program, SBIR/STTR enables small businesses to explore their technological potential and provide the incentive to profit from its commercialization. By including qualified small businesses in the nation's research and development (R&D) arena, high-tech innovation is stimulated, and the United States gains entrepreneurial spirit as it meets specific research and development needs.

The SBIR/STTR programs are executed in three phases. The purpose of Phase I is to determine the scientific technical and commercial merit, and feasibility of ideas submitted under the SBIR/STTR programs. Phase II is the principal research or research and development effort and is expected to produce a well-defined deliverable prototype. Phase III SBIR/STTR efforts derive from, extend or conclude Phase I or Phase II efforts, and are not funded with SBIR/STTR funds. Under Phase III, companies participating in the SBIR/STTR programs are expected to obtain funding from the private sector and/or non-SBIR/non-STTR government sources to develop the prototype into a viable product or non-R&D service for sale in military and/or private sector markets.

This Program funds the administrative support to the SBIR/STTR programs including: policy development, oversight of program execution for participating DoD agencies, outreach to small businesses, Impact Level IV (IL4) environment hosting/operation and maintenance for the Defense SBIR/STTR Innovation Portal (DSIP), and conduct of a virtual symposium to better communicate the DoD mission and technology needs to small businesses.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: SBIR Challenge Admin	3.820	3.831	5.346
Description: This program element is the only source of funds for the coordination, administration, and execution of the Department's SBIR/STTR programs in accordance with statute, Small Business Administration (SBA) SBIR/STTR Policy Directive, and the DoD policies and regulations. The Director, Small Business and Technology Partnerships (SBTP) within the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) is tasked with oversight and execution of essential SBIR/STTR Program activities that are required by law.			
FY 2024 Plans: - Continue coordination and execution of the expanding administrative responsibilities of the DoD SBIR/STTR programs; - Refine and improve established automated processes across the entire SBIR/STTR lifecycle;			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605790D8Z / *Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR)*	**Project (Number/Name)** 518 / *SBIR Challenge Admin*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Evaluate and expand existing outreach programs through a tiered approach to conduct due diligence of small businesses seeking SBIR/STTR awards; - Continue oversight and collection of results, track execution, and report Phase II technology transition results from the DoD SBIR/STTR Program; and - Prepare and respond to required reports mandated by law and policy. ***FY 2025 Plans:*** - Implement the due diligence program and provide small businesses with the revised foreign disclosure form; - Continue development of DoD-wide SBIR/STTR guidance on program implementation in order to help streamline; processes, remove barriers and decrease award timelines; - Continue implementation of and reporting on new requirements introduced in the SBIR/STTR program reauthorization; - Attend outreach events to promote program opportunities, encourage participation and clarify reauthorization program updates; - Incorporate reauthorization language into Phase III guidance for response to DoDIG-2014-049. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $1.515 million between FY 2024 and FY 2025 allows expansion of administrative support to implement the following eight new requirements imposed by the SBIR/STTR Extension Act of 2022: Sec. 4. Foreign Risk Management, Sec 5. Agency Recovery Authority and Ongoing Reporting, Sec 6. Report on Adversarial Military and Foreign Influence in the SBIR and STTR Programs, Sec. 7. Program on Innovation Open Topics, Sec. 8. Increased Minimum Performance Standards for Experienced Firms, Sec. 9. Prohibition Against Writing Solicitation Topics, Sec. 10. GAO Study on Multiple Award Winners, and Sec. 11. GAO Report on Subcontracting in SBIR and STTR Programs.			
Accomplishments/Planned Programs Subtotals	3.820	3.831	5.346

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	31.682	38.923	31.629	-	31.629	29.781	30.756	31.337	31.964	Continuing	Continuing
043: *Technology Innovation Base*	-	8.949	6.685	-	-	-	0.000	0.000	0.000	0.000	Continuing	Continuing
138: *S&T Protection*	-	8.767	12.671	13.356	-	13.356	11.858	12.597	12.838	13.095	Continuing	Continuing
139: *Joint Acquisition Protection Exploitation Cell (JAPEC)*	-	9.080	14.306	13.135	-	13.135	12.976	13.110	13.341	13.608	Continuing	Continuing
158: *Program and Technology Protection*	-	4.886	5.261	5.138	-	5.138	4.947	5.049	5.158	5.261	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's priorities to advance integrated deterrence, strengthen international cooperation with international Allies and partners, build sustainable and long-term technological advantage in critical technologies, and build a resilient Joint Force and Defense ecosystem.

This program supports the implementation of the 2023 National Defense S&T Strategy to develop and implement effective technology protection to support military innovation. Technology protection is vital to achieving an enduring advantage. While we must accept some degree of risk to catalyze innovation, we must also protect sensitive technologies and military programs from theft, diversion, and exploitation by our strategic competitors. We will build our technological edge using carefully targeted controls and by working closely with our Allies and partners to jointly and effectively protect our collective research, development, and innovation efforts, including warfighting concepts and capabilities during joint experimentation.

This Program Element provides funding to support efforts to maintain the Department of Defense's (DoD)'s technology advantage over strategic competitors in microelectronics, quantum computing, artificial intelligence, biotechnology, and other critical technology areas. Maturing and implementing the Office of the Under Secretary of Defense for Research and Engineering's (OUSD(R&E)) technology priorities requires a healthy and capable U.S. National Security Innovation Base (NSIB). The targeting of U.S. capabilities by our strategic competitors creates the potential to degrade core U.S. military technological advantages through unwanted technology transfer from the NSIB. This technology transfer includes exfiltration of unclassified technology, sensitive data, and of intellectual property, and could jeopardize DoD's ability to maintain the technology advantage required to support the lethality and survivability of the Joint Force.

DoD's plan to maintain technology advantage includes programs and plans to:

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*

(1) Make strategic technology investments to promote the development of new and innovative technologies. These investments will establish and maintain a robust academic and industrial base capable of creating breakthroughs in key areas of basic research, bringing products to market, and leveraging technologies within the U.S. innovation ecosystem or with likeminded Allies.

(2) Ensure the Department's strategic technology investments are protected against unwanted technology transfer by developing and maintaining the tools and techniques that enable the U.S. to engage in technology transfer at the time, place, and parties of our choosing.

(3) Combat strategic competitors' attempts to thwart the U.S. NSIB and implement unwanted technology transfer.

The Department will support these three efforts by developing the appropriate suite of analytic tools, a data acquisition strategy, and protection activities across the science and technology (S&T) enterprise and programs to address the threat over the long term. S&T protection focuses on ensuring the integrity of the research enterprise through development of policy and execution of due diligence on technology development efforts. Program Protection Planning includes protection of critical program information, critical components, and mission functions, and integrates high level security policies and practical expertise to specific research, development, and acquisition practices, systems engineering activities, secure cyber resilient engineering activities, software assurance activities and risk reduction activities. Through this initiative the Department is maturing system security engineering methodologies to protect controlled unclassified information, to include controlled technical information on contractor networks; improving mitigation of supply chain risk management risks; enhancing software assurance; integrating secure cyber resilient engineering into the engineering process; maturing processes to identify Critical Program Information integration as part of the Defense Exportability Features initiative; expanding software assurance capabilities provided by the Joint Federated Assurance Center (JFAC), which was established in Sec 937 of the National Defense Authorization Act (NDAA) for FY 2014; and improving program protection planning.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	32.812	38.923	38.100	-	38.100
Current President's Budget	31.682	38.923	31.629	-	31.629
Total Adjustments	-1.130	0.000	-6.471	-	-6.471
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.126	-			
• Program Adjustments	-0.004	-	-6.534	-	-6.534
• Economic Assumptions	-	-	0.063	-	0.063

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 043: *Technology Innovation Base*		
Congressional Add: *Securing American Science and Technology Program*	0.000	-
Congressional Add Subtotals for Project: 043	0.000	-
Congressional Add Totals for all Projects	0.000	-

Change Summary Explanation

Decrease of $6.215 million in FY 2025 is due to the transfer of Project Code 043 in PE 0605797D8Z / Maintaining Technology Advantage to Project Code 681 in PE 0603680D8Z / Defense-Wide Manufacturing Science and Technology Program to better align The Technology Industrial Innovation Base (TIIB) efforts within OUSD(R&E) in support of implementing the 2023 National Defense S&T Strategy and the 2022 National Defense Strategy.
A reduction of $0.319 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.
Funding increase of $0.063 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / *Maintaining Technology Advantage*	Project (Number/Name) 043 / *Technology Innovation Base*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
043: *Technology Innovation Base*	-	8.949	6.685	-	-	-	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Technology Industrial Innovation Base (TIIB) effort develops near- and long-term strategies and employs mechanisms to retain the U.S. advantage in current and emerging modernization technology priorities by addressing the capabilities of the industrial innovation base to develop, test, manufacture, and sustain them. This project provides support to technology priority leaders in identifying industrial innovation base needs; characterizing and assessing priority technology investments, identifying and mitigating issues and risks impacting the industrial innovation base, and exploiting opportunities to advance technology development, testing, and manufacturing. One of TIIB's main objectives is to create balance between promotion of the industrial innovation base while protecting the technology from interference or exploitation by competitors. This balance will aid the Department's advancing critical and emergent technologies ahead of competitor nations and actors while sustaining a healthy, resilient, and globally competitive industrial innovation base. This portfolio of activity extends efforts initiated in response to FY 2019 National Defense Authorization Act (NDAA) Section 1793.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Technology Industrial Innovation Base	8.949	6.685	-
Description: This project uses a three-step approach: (1) Assess, (2) Protect/Promote; and (3) Monitor. In the first step, TIIB uses emerging technology assessments to translate technology needs to manufacturing and industrial innovation base requirements in order to identify industrial innovation base issues, risks, and opportunities. TIIB created an assessment methodology that incorporates four types of studies to provide a full overview of the technology from a manufacturing and industrial innovation base point of view. The results of the assessments are used to generate industrial-innovation-base inputs to technology roadmaps, develop an investment plan addressing the needs of the industrial innovation base, and create technology and industrial innovation base protection and promotion strategies (second step of the approach). TIIB leverages DoD and Federal Government tools and initiatives to implement the strategies. In the third step, TIIB uses data analytics to measure the success of mitigation and exploitation strategies, establish trends in the markets, and identify the need for additional assessments or changes in investments and strategies. TIIB applied these three steps to Advanced Battery Supply Chain Disruptions, Capabilities within the Directed Energy Industrial Base, DoD Battery Standardization for 2030, Directed Energy Early Supply Chain, and began an assessment of the Strength and Resilience of the U.S. Quantum Technology Supply Chain. Additionally, TIIB organized and hosted the Trusted AI and Autonomous Systems (TAIA) Defense Technology Review Conference, the inaugural Hypersonics Horizontal Protection Workshop, and the Hypersonics Government-Industry Engagement Event (HGIEE).			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*	**Project (Number/Name)** 043 / *Technology Innovation Base*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Identify and address new, emerging manufacturing capabilities and technology base gaps that are critical to fielding modernization priorities and other U.S. technological advantage areas, including workforce, engineering and prototyping infrastructure and facilities. - Advance the emergent technologies and develop a healthy industrial innovation base. - Continue to manage technology innovation base assessments performed by other DoD and USG Agencies, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Center (UARCs), or industry. - Continue to conduct deep dive assessments to identify and address national security innovation base risks, issues, and opportunities related to DoD to include but not limited to: - Tools, technologies or techniques associated with development, testing, or manufacturing - Financial health of key industrial partners and suppliers - Workforce need for scientists, engineers, technicians - Single source materials, critical pockets of expertise, impacts to environmental events, exploitation by foreign actors to secure or deter critical elements of the innovation base - Continue to create Technology/Innovation Base strategies for each technology priority area to focus on industrial base affordability, sustainability, and other areas in collaboration with OUSD(R&E) Principal Directors and other stakeholders, as required. - Continue to identify and address new, emerging manufacturing capabilities and technology base gaps that are critical to fielding modernization priorities and other U.S. technological advantage areas, including workforce, engineering and prototyping infrastructure and facilities. - Continue to assess and strategize development for the hypersonics industrial base. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $6.685 million between FY 2024 and FY 2025 is due to the transfer of P043 in PE 0605797D8Z / Maintaining Technology Advantage to P681 in PE 0603680D8Z / Defense-Wide Manufacturing Science and Technology Program to better align the TIIB efforts within OUSD(R&E) in support of implementing the 2023 National Defense S&T Strategy and the 2022 National Defense Strategy.			
Accomplishments/Planned Programs Subtotals	8.949	6.685	-

	FY 2023	FY 2024
Congressional Add: Securing American Science and Technology Program ***FY 2023 Accomplishments:*** N/A	0.000	-
Congressional Adds Subtotals	0.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*	**Project (Number/Name)** 043 / *Technology Innovation Base*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / *Maintaining Technology Advantage*	Project (Number/Name) 138 / *S&T Protection*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
138: *S&T Protection*	-	8.767	12.671	13.356	-	13.356	11.858	12.597	12.838	13.095	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

As the Department develops advanced technologies, it must use a rigorous, repeatable methodology to protect technology advantage in addition to current Program Protection Planning policy. For example, the Department will establish and implement policy to protect critical technology in science and technology (S&T), encompassing the lifecycle of basic and applied research, advanced technology development, prototyping, and technology transition to programs. This includes driving consistency across risk-based security reviews for fundamental research and Small Businesses Innovation Research / Small Business Technology Transfer (SBIR/ STTR) programs. The production, updating, and use of Technology Area Protection Plans (TAPPs) generate consistent and balanced protection of critical technology, provide foundational guidance for communicating about the technology to particular audiences, and inform protection and controls integrated with technology promotion activities. The implementation of these policies and TAPPs have broad impacts across DoD and interagency-wide activities associated with critical technologies, including development of protection practices with; DoD research performers (e.g., the DoD and national laboratories, academia, small businesses, and the broader industrial innovation base); international agreements; counterintelligence and law enforcement priorities and activities; export controls; and foreign investment screening through the Committee on Foreign Investment in the United States (CFIUS).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Science and Technology (S&T) Protection	8.767	12.671	13.356
Description: This project supports efforts to maintain DoD's technology advantage by establishing activities to promote and ensure accountability for mitigating strategic competitor exploitation of technologies critical to national security objectives. This project will develop and oversee S&T policy and practices for informed horizontal protection of emerging and critical technology areas.			
FY 2024 Plans: - Update current TAPPs and develop new TAPPs for newly identified Critical Technology Areas. - Develop and institutionalize risk review and due diligence guidelines and efforts that are consistent across the DoD and mitigate foreign influence in S&T efforts. - Assess, improve, and continue the development of new data-driven models and capabilities that enable data-informed identification and implementation of courses of action that balance the promotion and protection of DoD technology advantage. - Continue to develop and implement proactive analytic tools supporting the biomanufacturing NSIB to identify strategic competitor programs and entities posing an increased risk of unwanted technology transfer, and mitigate those risks in support of the DoD Biomanufacturing Strategy.			
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*	**Project (Number/Name)** 138 / *S&T Protection*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Institutionalize and update as needed DoD risk-based security review policies (e.g., fundamental research, SBIR/STTR) that are consistent across the DoD and mitigate foreign influence in S&T efforts. - Continue to update TAPPs to drive horizontal protection of Critical Technology Areas. - Implement, refine, and develop new data-driven models and capabilities that enable data-informed identification and implementation of courses of action that balance the promotion and protection of DoD technology advantage. - Implement, assess, and improve proactive analytic tools supporting the biomanufacturing NSIB, including a map of the domestic biomanufacturing ecosystem for identification and tracking of metrics to support future implementation, refinement, and protection of U.S. investments in domestic biomanufacturing capabilities in support of the DoD Biomanufacturing Strategy. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $0.658 between FY 2024 and FY 2025 reflects the Department's need to continue to develop and implement proactive analytic tools supporting the protection of military capabilities that are being developed using emerging technologies, including biotechnology, quantum science, and advanced materials.			
Accomplishments/Planned Programs Subtotals	8.767	12.671	13.356

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense											Date: March 2024	
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605797D8Z / *Maintaining Technology Advantage*				Project (Number/Name) 139 / *Joint Acquisition Protection Exploitation Cell (JAPEC)*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
139: *Joint Acquisition Protection Exploitation Cell (JAPEC)*	-	9.080	14.306	13.135	-	13.135	12.976	13.110	13.341	13.608	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The DoD established a joint analysis capability, the Joint Acquisition Program and Exploitation Cell (JAPEC), to produce analytics products in support of the technology protection mission, such as formal reviews of CFIUS cases; engage with acquisition, intelligence, counterintelligence, and law enforcement sources to determine consequences of, and appropriate preventative/mitigation actions against unwanted technology transfer; and assess controlled unclassified technical information losses. The JAPEC detects and characterizes past technology losses, conducts damage assessments of lost information, and provides insights with predictive value to support and promote activities. Together with supporting organizations, such as the other member agencies of CFIUS pursuant to 50 U.S.C. 4565, and the export control agencies, the JAPEC enables comprehensive, detailed assessments of U.S. military technological vulnerability, as well as inform the development and application of effective policies, countermeasures, and enforcement actions to preserve U.S. technical superiority in all warfighting domains. JAPEC engages with select Allies and partners in order to develop protection efforts across the extended supply chains resulting from the partnerships created by the global S&T community.

JAPEC and supporting organizations synchronize, integrate, coordinate and inform the DoD efforts to protect critical technologies from malign investment by strategic competitors and to combat malign activities. JAPEC conducts trend analysis of protection efforts for the Department's critical acquisition programs and technologies, incorporates findings into protection processes and activities, and analyzes losses, to determine consequences and appropriate courses of action, such as deterrence of our strategic competitors as well as promotion of the NSIB.

JAPEC also manages OUSD(R&E)'s responsibilities for CFIUS, including the assessments, reviews, and investigations of transactions on the CFIUS docket, as well as the identification of "non-notified" transactions that are not yet before CFIUS but which may raise national security concerns meriting formal review. This line of effort involves the initial screening of all CFIUS transactions (to determine OUSD(R&E) equities), coordination with subject matter experts who provide vulnerability and consequence information to support the assessment of risks to national security presented by each transaction affecting OUSD(R&E) mission space, and full market analytics to carry out the President's September 2022 Executive Order for CFIUS to consider risks presented by aggregate industry investment trends. This effort also supports the Department of the Treasury, which chairs CFIUS, in its outreach to Allies and partners who are standing up similar investment screening capabilities, providing advice and technical assistance in those foreign-to-foreign investments which may indirectly affect U.S. national security.

JAPEC is also the focal point for related efforts, such as OUSD(R&E)'s screening of domestic mergers and acquisitions, which might impair the health of the Defense Industrial Base, and patent security reviews pursuant to the Invention Secrecy Act, to assess whether secrecy orders are warranted for patents pertaining to critical technology such as quantum computing. JAPEC also leads OUSD(R&E)'s export control activities where JAPEC provides technical advice and recommendations to the Defense Technology Security Administration regarding applications for licenses to export.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*	**Project (Number/Name)** 139 / *Joint Acquisition Protection Exploitation Cell (JAPEC)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Joint Acquisition Protection Exploitation Cell (JAPEC)	9.080	14.306	13.135
Description: Integrate controlled unclassified information, to include Controlled Technical Information (CTI), protection efforts across the DoD to proactively mitigate losses resulting from unwanted technology transfer and to exploit opportunities to combat strategic competitors that may threaten U.S. military advantage. ***FY 2024 Plans:*** - Continue development of protection measures and conduct performance measurements of their effectiveness. - Assess implemented exploitation opportunities to combat strategic competitors that threatened U.S. military advantage and continue the development of new exploitation opportunities. - Expand partnering and development of international (bilateral/multilateral) protection practices with select Allies into multiple DoD Critical Technology Areas (CTAs). - Assess the operationalization of critical program and technology enhanced protections to inform the implementation of further enhanced protections. - Continue integration with national counterintelligence and law enforcement efforts to combat unwanted strategic competitor activities. - Develop consistent technology protection guidance and actions across the DoD enterprise by integrating, synchronizing, and deconflicting current and future technology protection guidance and actions applied to technologies supporting DoD military capability. - Assess and improve the implementation of protection strategies involving the Committee on Foreign Investment in the United States (CFIUS), export controls, intellectual property, and mergers and acquisitions reviews related to Critical Technology Areas. - Monitor the NSIB and the performance of promote and protect activities. ***FY 2025 Plans:*** - Develop consistent technology protection guidance and actions across the DoD enterprise by integrating, synchronizing, and deconflicting current and future technology protection guidance and actions applied to technologies supporting DoD military capability. - Assess and improve the implementation of CTA protection lines of effort involving transactions subject to CFIUS, export control license applications, intellectual property, and domestic mergers and acquisitions , such as through new analytic products to illuminate trends among non-notified transactions that may merit the attention of CFIUS. - Support the NSC and DoD stakeholders in national and international policy making and the implementation of new policies. - Execute new investment risk authorities as required by statute or executive order, to include drafting implementing regulations.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*	**Project (Number/Name)** 139 / *Joint Acquisition Protection Exploitation Cell (JAPEC)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Work with DoD and interagency partners to scope export controls to protect emerging and foundational technology and to implement National Security Advisor guidance. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $1.197 million between FY 2024 and FY 2025 reflects a realignment of funds for higher priority DoD missions and $0.063 million in FY 2025 for Economic Assumptions.			
Accomplishments/Planned Programs Subtotals	9.080	14.306	13.135

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / *Maintaining Technology Advantage*	Project (Number/Name) 158 / *Program and Technology Protection*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
158: *Program and Technology Protection*	-	4.886	5.261	5.138	-	5.138	4.947	5.049	5.158	5.261	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Department of Defense (DoD) must address cybersecurity and supply chain risks to DoD networks, weapons systems, and information stored and processed on both the DoD and the Defense Industrial Base (DIB) unclassified contractor information networks that support DoD programs. Advanced persistent threats (APTs) that can evade commercially available security tools and defeat generic security best practices, drives the need for diligent program protection planning and execution. This project supports implementation of DoDI 5000.83, Technology and Program Protection to Maintain Technological Advantage. Activities carried out for Program Protection Planning include protection of controlled technical information, critical program information, critical components and critical mission functions; and integration of system security policies and acquisition and S&T practices, secure cyber resilient engineering activities, and system security risk reduction activities. This initiative is maturing system security engineering methodologies to protect controlled unclassified information, to include controlled technical information on contractor information networks; improve software and hardware assurance mitigations and management of information communication technology (ICT) supply chain risk management risks, improve integration of cybersecurity into the engineering processes through secure cyber resilient engineering methods, improve software assurance and hardware assurance practices, mature processes to identify and protect Critical Program Information, mature processes to integrate defense exportability features to allow for expediated transfer of U.S. defense systems, and improve program protection planning. Activities carried out, support DoD Instruction 5200.44 Trusted Systems and Networks with the use of proven mitigation techniques and tools, the ongoing refinement of ICT risk management processes, and creation of needed technology; implementation of DoD Instruction 5200.39 Critical Program Information (CPI) Identification and Protection Within Research, Development, Test, and Evaluation (RDT&E) and DoD Directive 5200.47 Anti Tamper to identify and protect Critical Program Information; and implementation of DoD Instruction 8582.01 Security of Unclassified DoD Information on Non-DoD Information Systems for Safeguarding Controlled Unclassified Information on contractor owned networks.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Program and Technology Protection	4.886	5.261	5.138
Description: This project provides system security engineering and secure cyber resilient engineering policy, guidance and technical implementation assessments to inform and reduce risks in sharing and storing Controlled Technical Information and data, improve mitigation of ICT supply chain risk management risks, improve integration of cybersecurity into the engineering processes, improvements in defense exportability and anti-tamper practices, improve processes and tools to identify Critical Program Information and improve program protection planning. Activities carried out support implementation of DoD instruction 5000.83, Technology and Program Protection to Maintain Technological Advantage; DoD Instruction 5200.44 Trusted Systems and Networks; DoD Instruction 5200.39 Critical Program Information (CPI) Identification and Protection Within RDT&E and DoD Directive 5200.47E Anti Tamper to identify and protect Critical Program Information; DoD Instruction 8582.01 Security of Unclassified DoD Information on Non-DoD Information Systems.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*	**Project (Number/Name)** 158 / *Program and Technology Protection*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: Continue to: Provide support to Independent Technical Review Assessment and Cyber Vulnerability Review Assessment teams in conduct of broad program protection planning activities to assess: - Conduct of criticality analyses to determine supply chain risk management protections. - Conduct of Critical Program Information analysis to determine anti-tamper protections. - Conduct of secure cyber resilient engineering activities to determine technical cyber risks. Advance the state of the practice of systems security engineering and secure cyber resilient engineering: - Continue secure software assurance activities to support expansion of capabilities provided by the Joint Federated Assurance Center (JFAC) and implementation of EO 14028, Improving the Nation's Cybersecurity. - Continue development of methodologies to identify and mitigate system security risk, to include cybersecurity and supply chain risk. - Continue to develop courseware, refine guidance, provide training, and outreach with government and industry. - Continue to refine guidance, tools and mitigation approaches to mitigate capability, system and technology risks. Safeguard Controlled Unclassified Information, including Controlled Technical Information: - Continue to refine implementation and guidance of marking and dissemination of distribution of technical information. - continue to refine safeguarding information protection methods for contractor unclassified information networks. Safeguard Critical Program Information: - Continue to refine implementation, guidance and tools to identify Critical Program Information. - Continue to refine Anti-Tamper protections methods to safeguard Critical Program Information. Defense exportability features integration: - Continue to mature processes, methods and guidance for defense exportability features integration.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*	**Project (Number/Name)** 158 / *Program and Technology Protection*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Pilot improvements to defense exportability protection methods to provide expediated transfer to Allies and partners of U.S. Defense systems. ***FY 2025 Plans:*** Provide support to 3 USD(R&E) Independent Technical Review Assessments for conduct of program protection planning and cyber vulnerability activities to assess: - Conduct of criticality analyses and supply chain risk management protections. - Conduct of Critical Program Information analysis and anti-tamper protections. - Conduct of secure cyber resilient engineering activities and technical cyber risks. Advance the state of the practice of systems security engineering and secure cyber resilient engineering: - Continue implementation activities to expand software assurance capabilities provided by the JFAC software assurance military centers to implement secure software supply chain requirements in EO 14028, Improving the Nation's Cybersecurity. - Continue development of system security engineering methodologies to align with the updated DoDI 5200.44; methods include use of Defense Microelectronics Activity when products and services are not available, and application of exclusion authorities to identify and mitigate system security risk, to include cybersecurity and ICT supply chain risk, methodologies include software assurance, hardware assurance, system assurance. - Continue to develop secure cyber resilient engineering courseware, refine guidance, refine standards, supporting program protection and conduct outreach with government, industry, and allies and partners. - Deliver recommendation to NATO on approach to update NATO Standard on Engineering for System Assurance in Programmes to align with US adoption of System Assurance. - Continue to refine secure cyber resilient engineering guidance, tools and mitigation approaches for capability, system and technology risks. Safeguard Controlled Unclassified Information, including Controlled Technical Information: - Develop guidance to implement NIST SP 800-172 for controlled technical information. - Refine guidance for safeguarding information protection methods for contractor unclassified information networks to based on implementation lessons learned. Safeguard Critical Program Information: - Deliver Critical Program Information Horizontal Protection Guidance to refine anti tamper methods and implementation in support of the 2022 National Defense Strategy for advancing regional goals with Allies and Partners - Continue to oversee Anti Tamper Executive Agent -			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605797D8Z / *Maintaining Technology Advantage*	**Project (Number/Name)** 158 / *Program and Technology Protection*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Defense exportability integration: - Continue to refine improvements to defense exportability protection methods to allow expedited transfer to allies and partners of U.S. Defense systems. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $0.133 million between FY 2024 and FY 2025 reflects fluctuation in USD(R&E) Independent Technical Review Assessments for Program Protection from 4 assessment numbers to 3 assessments and scope of duties, and maintenance of FY 2025 execution of assessment tasks and support of new emerging technology assignments.			
Accomplishments/Planned Programs Subtotals	4.886	5.261	5.138

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605798D8Z / *Defense Technology Analysis*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	53.695	60.404	45.370	-	45.370	46.137	47.106	48.131	49.093	Continuing	Continuing
728: *Homeland Defense Capability Development*	-	3.924	3.187	2.823	-	2.823	2.883	2.941	3.006	3.066	Continuing	Continuing
796: *Laboratory Resource Management*	-	29.665	33.773	31.831	-	31.831	32.228	32.935	33.566	34.236	Continuing	Continuing
797: *Defense Technology Analysis*	-	11.145	14.530	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
798: *Defense Support Teams*	-	8.961	8.914	9.059	-	9.059	9.253	9.445	9.649	9.843	Continuing	Continuing
965: *Tech Trans & Comm Partnership*	-	0.000	0.000	1.657	-	1.657	1.773	1.785	1.910	1.948	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department’s initiatives to Build a Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

This program provides mission support to the USD(R&E) covering a wide range of studies and analysis in support of the R&E program and its impacts on the Department's decision to fund RDT&E efforts. Such activities include: (1) identification and development of new technological opportunities; (2) insertion of new technologies into warfighting systems and operations; and (3) management and evaluation of the effectiveness of technology programs.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605798D8Z / *Defense Technology Analysis*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	55.565	60.404	60.492	-	60.492
Current President's Budget	53.695	60.404	45.370	-	45.370
Total Adjustments	-1.870	0.000	-15.122	-	-15.122
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.865	-			
• Program Adjustments	-0.005	-	-15.212	-	-15.212
• Economic Assumptions	-	-	0.090	-	0.090

Change Summary Explanation

The reduction of $15.212 is due to $11.515 million re-aligned in FY 2025 to PE 0605711D8Z Critical Tech Analysis. $3.240 million re-aligned in FY 2025 to PE 0603945D8Z to support international engagement and other operational requirements and reduction of $0.457 million is applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.090 million in FY 2025 for Economic Assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / *Defense Technology Analysis*	Project (Number/Name) 728 / *Homeland Defense Capability Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
728: *Homeland Defense Capability Development*	-	3.924	3.187	2.823	-	2.823	2.883	2.941	3.006	3.066	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In order to better align and support the Joint Warfighting Concept, the Homeland Defense Capability Development initiative is focused on small unmanned and counter small unmanned systems science and technology (S&T) innovation.

A. Mission Description and Budget Item Justification

The Homeland Defense Capability Development Initiatives project uniquely engages with the Services, Combatant Commands, and our federal partners on critical S&T initiatives to both develop emerging unmanned systems technology and countering small unmanned system threats to our military forces and installations across all domains. Work in this project explores and identifies critical technology needs across the domains of Air, Land, Sea and Space, and enables development of synergistic platforms and weapons systems S&T strategies to include unmanned and counter small unmanned systems technologies, directed energy, munitions, power and energy, and their applications to future force projection and protection capabilities as identified in the National Defense Strategy.

Key technology applications complement the Office of the Under Secretary of Defense for Research and Engineering's (OUSD(R&E)) modernization priorities: Fully Networked Command, Control, and Communications; Directed Energy; Cyber; Autonomy; and Machine Learning/Artificial Intelligence.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Homeland Defense Capability Development Initiatives	3.256	3.187	2.823
Description: The Homeland Defense Capability Development Initiatives project uniquely engages with the Services, Combatant Commands, and our federal partners on critical S&T initiatives to both develop emerging unmanned systems technology and countering small unmanned system threats to our military forces and installations across all domains. Work in this project explores and identifies critical technology needs across the all domains, and supports development of synergistic enabling platforms and weapons systems S&T strategies to include unmanned and counter small unmanned systems technologies, munitions, power and energy, advanced materials, position, navigation and timing and quantum science, biotechnology, future generation wireless technology, and their applications to future force projection and protection capabilities as identified in the National Defense Strategy. Key technology applications complement the Office of the Under Secretary of Defense for Research and Engineering's critical technology areas: Integrated Network System-of-Systems; Directed Energy; Integrated Sensing and Cyber; Trusted Artificial			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605798D8Z / *Defense Technology Analysis*	**Project (Number/Name)** 728 / *Homeland Defense Capability Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Intelligence and Autonomy; Human Machine Interfaces; Advanced Materials; Biotechnology; Quantum Science; and Future Generation Wireless Technology. ***FY 2024 Plans:*** Complete the development and understanding of the characterization of sUAS 5G transmitters/receivers. Complete analysis and assessments to understand if there is any 5G information (protocols, header information, and message content) that can be used to detect/track/identify 5G sUAS. Complete characterization of how a sUAS behaves under different jamming/electronic warfare conditions. Conduct an overview of counter unmanned systems swarm science and technology (S&T) developmental efforts and field testing of technologies that offer scalable/modular options, and can lead to rapid development of deployable systems. Identify new technologies to improve air defense capabilities and force protections against radio frequency jamming / global navigation satellite system resilient threat UAS. Continue assessment of S&T efforts of unmanned systems in the area of countering autonomous systems/swarms and intelligence, surveillance, and reconnaissance (ISR) sUAS. Complete modeling and simulation analysis of large scale counter unmanned systems capabilities in the homeland based on current/future technical capabilities of both friendly and adversarial unmanned systems. Complete joint allied counter-swarm analysis and S&T counter-swarm efforts as part of the United States/United Kingdom Stocktake agreement and The Technical Cooperation Program (TTCP); implement a plan to transition capabilities to operational prototype and fielding to the Warfighter. Further strategic studies, analyses and modeling to identify critical technologies required to enable advanced force projection and protection capabilities and mitigate future adversarial threats. ***FY 2025 Plans:*** Perform component system integration and additional technology development to produce a technologically mature counter 5G sUAS demonstrator systems and demonstrate system performance at a field test in a controlled test environment. Conduct a prototype demonstration of counter unmanned systems swarm science and technology (S&T) efforts and field evaluation of technologies that offer scalable/modular options that can lead to rapid development of deployable systems. Identify and implement technical and operational approaches to improve defensive measures that decrease the effectiveness of attacks against friendly forces and their assets from threat unmanned systems. Continue assessment of S&T efforts of unmanned systems in the area of countering autonomous systems/swarms and intelligence, surveillance, and reconnaissance (ISR) sUAS. Use modeling and simulation analysis results of large-scale counter unmanned systems capabilities in the homeland based to improve current/future technical capabilities of both friendly and adversarial unmanned systems. Complete joint allied counter-swarm analysis and S&T counter-swarm efforts as part of the United States/United Kingdom Stocktake agreement and The US-Israel Operational Technology Working Group (OTWG); implement a plan to transition capabilities to operational prototype and fielding to the Warfighter.Continue counter unmanned aircraft systems technology cooperation initiatives with allies from the Indo-pacific region. Further strategic studies, analyses and modeling to identify critical technologies required to enable advanced force projection and protection capabilities and mitigate future adversarial threats across air, land, and sea domains.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605798D8Z / *Defense Technology Analysis*	**Project (Number/Name)** 728 / *Homeland Defense Capability Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Funding is allotted for Advanced Materials Technologies support to assist with budget priorities, tracking technology readiness and road mapping activities for materials and manufacturing processes. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** A decrease of $0.347 million between FY 2024 and FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact.			
Title: Defense Advanced Battery Supply Chain ***Description:*** In coordination with Army, Navy, and USD(A&S), generate analytics that characterize the Department's current and projected energy/advanced battery needs. Develop and implement the methodology to effectively measure and track vulnerabilities in the battery supply chain across the Services.	0.668	-	-
Accomplishments/Planned Programs Subtotals	3.924	3.187	2.823

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / *Defense Technology Analysis*	Project (Number/Name) 796 / *Laboratory Resource Management*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
796: *Laboratory Resource Management*	-	29.665	33.773	31.831	-	31.831	32.228	32.935	33.566	34.236	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Laboratory Resource Management project provides funding for the Defense Laboratory Office within the USD(R&E). The Defense Laboratory Office mission is to craft policy and provide the oversight necessary to both preserve current, and develop future, DoD in-house laboratory capabilities such that they continue to generate mission-critical innovations that increase the U.S. military advantage and enhance U.S. national security. The Defense Laboratory Office advocates and supports the DoD laboratory system in three areas: (1) facilities and infrastructure; (2) personnel and quality of workforce; and (3) technology transfer. FY 2022 added the Central Lab Investment Program (CLIP). This effort seeks to address infrastructure gaps within the Department's Laboratory community by establishing a dedicated funding stream for the DoD's laboratories to address infrastructure issues, including facility planning, design, construction, sustainment repair, and/or modernization.

The DoD Laboratory Enterprise consists of more than 60 laboratories with approximately 67,000 employees (approximately 50,000 of whom are scientists and engineers).

Section 211 of the National Defense Authorization Act (NDAA) for FY 2017 also transferred the management of the laboratory demonstration program at Science and Technology Reinvention Laboratories (STRLs) from the Under Secretary of Defense for Personnel and Readiness (USD(P&R)) to the Under Secretary of Defense for Research and Engineering (USD(R&E)).

Section 218 of the NDAA for FY 2018 amended the authority by re-designating management to the USD(R&E).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Laboratories and Personnel Office	5.760	5.773	3.689
Description: Provides advocacy, strategic planning, and policy for the DoD's laboratories. Develops proposals and investment strategies for laboratory infrastructure, technology transfer programs, and personnel development.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605798D8Z / *Defense Technology Analysis*	**Project (Number/Name)** 796 / *Laboratory Resource Management*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Propose and evaluate best practices for planning, programming, and executing infrastructure construction projects at DoD Science and Technology Reinvention Laboratories (STRLs) and support methodologies for assessing their readiness to achieve their missions. ***FY 2025 Plans:*** Propose and evaluate best practices for planning, programming, and executing infrastructure construction projects at DoD Science and Technology Reinvention Laboratories (STRLs) and support methodologies for assessing their readiness to achieve their missions. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease of $2.084 between FY 2024 and FY 2025 supports the internal realignment of $1.671 to New Project - Technology Transfer and Commercial Partnership; decrease of $0.413 reflects minor budget fluctuations.			
Title: Central Lab Investment Program (CLIP) ***Description:*** This effort seeks to address infrastructure gaps within the Department's Laboratory community by establishing a dedicated funding stream for the DoD's laboratories to address infrastructure issues, including facility planning, design, construction, sustainment repair, and/or modernization. In addition, CLIP could be used to acquire advanced equipment and tools, enabling the laboratories to devote their RDT&E funding to critical research and development and offset their sustainment, repair, and modernization (SRM) funding gap. ***FY 2024 Plans:*** Select and award laboratory infrastructure and equipment projects received under a FY 2023 call for proposals. Continue strategic plans and projects that meet the program's objectives to comprehensively address infrastructure issues. ***FY 2025 Plans:*** Funds will address the challenges that the Service laboratories face in their attempts to fund laboratory and equipment capability improvements through a comprehensive strategic plan. Select and award laboratory infrastructure and equipment projects received under a FY 2024 call for proposals. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The funding increase of $0.102 million between FY 2024 and FY 2025 is due to minor budget fluctuations.	23.905	28.000	28.142
Accomplishments/Planned Programs Subtotals	29.665	33.773	31.831

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605798D8Z / *Defense Technology Analysis*	**Project (Number/Name)** 796 / *Laboratory Resource Management*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / *Defense Technology Analysis*	Project (Number/Name) 797 / *Defense Technology Analysis*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
797: *Defense Technology Analysis*	-	11.145	14.530	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Defense Technology Analysis (DTA) project funds engineering, scientific, and analytical support for the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) and specifically the Officer of Deputy Chief Technology Office for Critical Technologies DCTO(CT). The DCTO(CT) supports the USD(R&E) by prioritizing the National Defense Strategy modernization lines of effort in order to maintain competitive advantage against adversaries. The efforts funded in this project directly support and are critical to developing and continuously updating research and technology development roadmaps as required by Section 217 of the National Defense Authorization Act for FY 2021.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense Technology Analysis	11.145	14.530	-
Description: The DCTO(CT) is responsible for developing the Department's roadmap efforts in the fourteen modernization priority areas: Directed Energy, Hypersonics, Integrated Sensing and Cyber, Trusted AI & Autonomy, Integrated Sensing & Cyber, Microelectronics, Space Technology, Renewable Energy Generation & Storage, Advanced Computing & Software, Human-Machine Interfaces, Advanced Materials, Biotechnology, Quantum, and Future G. Identification of leading edge technology is critical in delivering capability to the warfighter and maintaining the competitive advantage. Funding for research, technical analysis and management, and other advanced research methods will allow for success in identifying game changing technology investments for the Department's modernization efforts. ***FY 2024 Plans:*** Adversary and competitor actions seek to disrupt and diminish the United States' advantages. Advancement of research and development in the modernization priorities will enhance the United States' competitive advantage. The Department will continue to conduct analysis and research studies to support updates to and advancements of modernization roadmaps synchronized with related priorities. Focus areas include the emerging technology industrial base and the workforce, including universities. The studies and analyses conducted will focus not only on closing gaps and identifying overlap, but providing leap-ahead capabilities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease of $14.530 million between FY 2024 and FY 2025 is due to a realignment to PE 0605711D8Z, project code 892 - Critical Technology Analysis.			
Accomplishments/Planned Programs Subtotals	11.145	14.530	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605798D8Z / *Defense Technology Analysis*	**Project (Number/Name)** 797 / *Defense Technology Analysis*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / *Defense Technology Analysis*	Project (Number/Name) 798 / *Defense Support Teams*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
798: *Defense Support Teams*	-	8.961	8.914	9.059	-	9.059	9.253	9.445	9.649	9.843	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Department's key expertise for reviewing and guiding research and engineering (R&E) programs resides in the (OUSD(R&E). The OUSD(R&E) staff augment their responsibilities through connections to technology experts in various fields throughout academia, industry, and government.

This project provides engineering, scientific, and analytical support to the OUSD(R&E) in its responsibility for direction, overall quality, and content of the science and technology (S&T) program. This activity conducts assessments and analyses to ensure maximum utilization of research and development funds to accomplish the overall objectives of the S&T program. It ensures the technology being developed is affordable and minimizes system development risk. Funds are required for technical, analytical, management support, travel, and publications.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense Support Teams	8.961	8.914	9.059
Description: This project provides engineering, scientific, and analytical support to the OUSD(R&E) in its responsibility for direction, overall quality, and content of the S&T program. Furthermore, it ensures that the technology being developed is affordable and minimizes system development risk.			
FY 2024 Plans: Continue to provide engineering, scientific, analytical, and managerial support to the OUSD(R&E) in developing strategies, plans, and policies to develop and exploit technology; conduct technology analyses, make recommendations, and develop guidance for S&T plans and programs; review acquisition programs and make recommendations to optimize effectiveness of the DoD investments; and oversight of S&T issues and initiatives and respond to Congressional special interests.			
FY 2025 Plans: The FY 2025 plans will be formulated during FY 2024 with efforts related to engineering, scientific, analytical, and managerial support to the OUSD(R&E) in developing strategies, plans, and policies to develop and exploit technology; conduct technology analyses, make recommendations, and develop guidance for S&T plans and programs; review acquisition programs and make recommendations to optimize effectiveness of the DoD investments; and oversight of S&T issues and initiatives and respond to Congressional special interests.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605798D8Z / *Defense Technology Analysis*	**Project (Number/Name)** 798 / *Defense Support Teams*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Increase of $0.150 million between FY 2024 and FY 2025 reflects minor budget fluctuations.			
Accomplishments/Planned Programs Subtotals	8.961	8.914	9.059

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / *Defense Technology Analysis*	Project (Number/Name) 965 / *Tech Trans & Comm Partnership*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
965: *Tech Trans & Comm Partnership*	-	0.000	0.000	1.657	-	1.657	1.773	1.785	1.910	1.948	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Technology Transfer and Commercial Partnership's (T2CP) mission is to provide policy, guidance and coordination of the DoD T2 Components' programs which encompass more than 9,000 active public private partnerships with DoD laboratories. The T2 budget is used to implement the 15 USC 3702 and 3710, multiple 10 USC partnership authorities, and DoD Instructions 5535.08 and .11.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Technology Transfer and Commercial Partnership	-	-	1.657
Description: Provides the resources for the management and policy of OSD and DoD-Wide T2 activities. Provides contractual and subject matter expert support for the Undersecretary of Defense (Research and Engineering)'s DoD Domestic T2 responsibilities per DoDD 5137.02			
FY 2025 Plans: The Department of Defense (DoD) laboratories continue to develop and transfer innovative solutions to the US industrial base for economic impact in excess of $100B. $10B of this was transition back to the DoD as developed products and services. The DoD will continue to improve the transfer and transition of technologies by implementing a DoD strategic plan that derives from the recommendations of the DoD technology transfer (T2) Impact Model study and DoD T2 components' participation, notably: • Technology transition through T2 – developing training tools and resources for laboratory T2 professionals (and technical staff) and acquisition offices to better plan for transition during technology development. • Professional development – continue to coordinate and provide support for developing DoD laboratory T2 professional staffs to be public private partnership experts. • DoD laboratory generated intellectual property (IP) including software – develop additional guidance (handbook and training) to protect and transfer IP and software.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605798D8Z / *Defense Technology Analysis*	**Project (Number/Name)** 965 / *Tech Trans & Comm Partnership*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• The Defense Technology Transfer Information System (DTTIS) is the DoD T2 agreements and intellectual property management information system, a DoD-wide IP docketing and agreement management system to provide enterprise-wide transparency into public private partnerships and IP portfolio, as well as increased efficiency, effectiveness and productivity. • National partnership intermediaries – DoD laboratories use partnership intermediaries to help engage and transact with US businesses and educational institutions for the transfer and transition of technologies. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase of $1.675 between FY 2024 and FY 2025 supports the internal realignment from P796 Laboratories and Personnel Office to create Technology Transfer and Commercial Partnership.			
Accomplishments/Planned Programs Subtotals	-	-	1.657

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605804D8Z / *Development Test & Evaluation*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	192.311	25.286	37.353	37.233	-	37.233	37.620	38.492	39.329	40.115	Continuing	Continuing
804: *Development Test & Evaluation*	178.908	18.435	19.683	19.944	-	19.944	20.376	20.800	21.252	21.677	Continuing	Continuing
048: *Cybersecurity DT&E for Weapon Systems*	13.403	6.851	7.111	7.052	-	7.052	7.204	7.355	7.516	7.666	Continuing	Continuing
149: *Independent Engineering Assessments*	0.000	0.000	10.559	10.237	-	10.237	10.040	10.337	10.561	10.772	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program carries out the duties in accordance with Title 10 U.S.C. Section 133a, FY 2018 National Defense Authorization Act (NDAA) (Public Law 115-91) section 838, and the Department of Defense (DoD) Directive 5137.02 dated July 15, 2020. In FY 2020, the Under Secretary of Defense for Research and Engineering (USD(R&E)) established the Developmental Test, Evaluation, and Assessments (DTE&A) organization to provide consolidated Developmental Test and Evaluation (DT&E) and Independent Engineering Assessment functions in a single office. The Executive Director, DTE&A, is the principal advisor to the Secretary of Defense; USD(R&E); and the Under Secretary of Defense, Acquisition and Sustainment (USD(A&S)) on DT&E, Independent Engineering Assessments, and Technical Risk Assessments in the Department of Defense (DoD). This program supports the Department's initiatives to Build a Sustainable and Long-Term Advantage and Build a Resilient Joint Force and Defense Ecosystem.

The Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) engages with acquisition and rapid prototype programs, providing engineering and DT&E/Cybersecurity DT&E planning expertise to ensure decision-quality data is available at major engineering program reviews and program milestones. This engagement directly helps Program Managers succeed in modernizing key capabilities to Build a More Lethal Force. OUSD(R&E) engages with programs to help meet interoperability requirements to deepen interoperability and Strengthen Alliances. Finally, OUSD(R&E) works with Director, Operational Test and Evaluation to streamline T&E policy and guidance to improve test efficiency and reduce acquisition cost and schedule to Reform the Department for Greater Performance and Affordability.

This program supports and improves the engineering and DT&E efforts of Major Defense Acquisition Program (MDAP), Rapid Prototyping/Fielding efforts, and other Special Interest (SI) acquisition programs designated by USD(R&E) or USD(A&S) as they progress through the acquisition/development lifecycle; supports development of the defense acquisition workforce Test and Evaluation (T&E) career field; and supports development of policy and guidance for the conduct of DT&E and Cyber DT&E within the DoD. This program also provides dedicated resources to support MDAP and Rapid Prototyping/Fielding Program Managers, Chief Developmental Testers,

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605804D8Z / *Development Test & Evaluation*

and Lead Development Test & Evaluation organizations in the development of comprehensive, efficient, and innovative Cybersecurity DT&E strategies/plans to support key acquisition milestones and engineering/programmatic decisions.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	26.049	37.353	37.533	-	37.533
Current President's Budget	25.286	37.353	37.233	-	37.233
Total Adjustments	-0.763	0.000	-0.300	-	-0.300
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.760	-			
• Other Reprogrammings	-0.003	-	-	-	-
• Program Adjustment	-	-	-0.300	0.000	-0.300

Change Summary Explanation

A reduction of $0.375 million was applied to DoD overall funding reductions, which were spread to mitigate impact. A funding increase of $0.075 million for Economic Assumptions. Overall net reduction of $0.300 million applied.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605804D8Z / *Development Test & Evaluation*	Project (Number/Name) 804 / *Development Test & Evaluation*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
804: *Development Test & Evaluation*	178.908	18.435	19.683	19.944	-	19.944	20.376	20.800	21.252	21.677	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Development Test & Evaluation (DT&E) project 804 provides resources to support Major Defense Acquisition Program (MDAP) and Rapid Prototyping/Fielding Program Managers, Chief Developmental Testers, and Lead DT&E Organizations in the development of comprehensive, efficient, and innovative DT&E strategies/ plans to support key acquisition milestones and engineering decisions. This project also supports the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) to manage the Test & Evaluation (T&E) career field and curriculum for the Department of Defense (DoD) acquisition workforce and develop policy and guidance for the conduct of DT&E within DoD. On behalf of the USD(R&E) this project executes the following activities:

- Support acquisition programs in the development of comprehensive, efficient, and innovative test strategies. Ensure that developmental test strategies are documented in Test and Evaluation Master Plans (TEMPs). For Acquisition Category (ACAT) ID programs, review and approve/disapprove the DT&E strategy/plans within the TEMP. For ACAT IB and IC programs, review the DT&E strategy/plans within the TEMP and provide a recommendation to the Service Milestone Decision Authority as to whether or not the strategy is adequate.
- Support rapid prototyping, rapid fielding, and technology demonstrations efforts in the development of tailored comprehensive, efficient, and innovative DT&E strategies/plans.
- For ACAT ID programs, provide independent DT&E Sufficiency Assessments to the Defense Acquisition Executive at the Milestone B and C decisions with the goal of reducing discovery of performance issues later in the acquisition cycle.
- For ACAT IB and IC programs, provide an independent DT&E program assessment to the Service Milestone Decision Authority prior to the development Request for Proposal (RFP) release decision point and at the Milestone B and C decisions with the goal of reducing discovery of performance issues later in the acquisition cycle.
- When requested by the Secretary or Deputy Secretary of Defense, provide independent developmental test assessments in support of Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)) and Service Major Defense Acquisition Programs.
- Support the development of independent technical risk assessments and advise the Secretary on the progress toward meeting Key Performance Parameters, technology maturation, reliability growth projections, interoperability, and cybersecurity posture before any decision to grant Milestone A or B approval, or enter into low-rate initial production or full-rate production for ACAT ID programs or when requested by the Secretary.
- Support the Scientific Test and Analysis Techniques Center of Excellence (STAT COE) that provides scientific analytical expertise to service MDAPs.
- Identify the DoD test infrastructure gaps and support development of the OUSD(R&E) test resources strategic plan.
- Evolve the DT&E 'state of practice' to keep pace with emerging technologies and improve test efficiency to field systems faster.
- Coordinate with Director, Operational Test and Evaluation to improve T&E efficiency and make best use of integrated testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Development Test and Evaluation	18.435	19.683	19.944

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605804D8Z / *Development Test & Evaluation*	**Project (Number/Name)** 804 / *Development Test & Evaluation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The Development Test & Evaluation (DT&E) project 804 supports and improves the DT&E efforts of Major Defense Acquisition Program (MDAP), Rapid Prototyping/Fielding efforts, and other Special Interest (SI) acquisition programs as they progress through the acquisition/development lifecycle; lead the defense acquisition workforce T&E career field; and support development of policy and guidance for the conduct of DT&E within the DoD. ***FY 2024 Plans:*** - Continue to work with Acquisition Program Managers, Chief Developmental Testers, and Lead DT&E organizations to improve DT&E planning and develop comprehensive and efficient DT&E strategies/plans through the use of disciplined Developmental Evaluation Framework matrices and Scientific Test and Analysis Techniques (STAT). - Continue to support rapid prototyping, rapid fielding, and technology demonstrations efforts in the development of tailored comprehensive, efficient, and innovative DT&E strategies/plans. - Continue to implement the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) 'Shift Left' initiative that focuses on ensuring DT&E strategies are developed in advance of releasing Technology Maturation and Risk Reduction (TMRR) and Engineering and Manufacturing Development (EMD) Request for Proposals (RFPs), and increasing the amount and quality of data available to support production decisions with specific focus on cybersecurity, interoperability, and reliability. - For Acquisition Category (ACAT) ID programs, review/approve all Test and Evaluation Master Plans (TEMPs) submitted to support milestone reviews. For ACAT IB and IC programs, review the DT&E strategy/plans within the TEMP and provide a recommendation to the Service Milestone Decision Authority as to whether or not the strategy is adequate. - For ACAT ID programs, publish independent DT&E Sufficiency Assessments prior to Milestone B and C decisions with the goal of reducing discovery of performance issues later in the acquisition cycle. - For ACAT IB and IC programs, publish independent DT&E program assessments at the development Request for Proposal (RFP) release decision point and Milestone B and C decisions with the goal of reducing discovery of performance issues later in the acquisition cycle. - When requested by the Secretary or Deputy Secretary of Defense, provide independent developmental test assessments in support of Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)) and Service Milestone Decision Authorities. - Refine DT&E policies and methodologies addressing DT&E across all Acquisition programs. - Promote the application of sound Development Test and Evaluation (DT&E) and related technical disciplines across the Department's acquisition community and programs. - Implement initiatives that evolve the DT&E 'state of practice' to keep pace with emerging technologies and improve test efficiency to field systems faster. ***FY 2025 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605804D8Z / *Development Test & Evaluation*	**Project (Number/Name)** 804 / *Development Test & Evaluation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue to work with Acquisition Program Managers, Chief Developmental Testers, and Lead Development Test and Evaluation (DT&E) organizations to improve DT&E planning and develop comprehensive and efficient DT&E strategies/plans through the use of disciplined Developmental Evaluation Framework matrices and Scientific Test and Analysis Techniques (STAT). - Continue to support rapid prototyping, rapid fielding, and technology demonstrations efforts in the development of tailored comprehensive, efficient, and innovative DT&E strategies/plans. - Continue to implement the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) 'Shift Left' initiative that focuses on ensuring DT&E strategies are developed in advance of releasing Technology Maturation and Risk Reduction (TMRR) and Engineering and Manufacturing Development (EMD) Request for Proposals (RFPs), and increasing the amount and quality of data available to support production decisions with specific focus on cybersecurity, interoperability, and reliability. - For Acquisition Category (ACAT) ID programs, review/approve all Test and Evaluation Master Plans (TEMPs) submitted to support milestone reviews. For ACAT IB and IC programs, review the DT&E strategy/plans within the TEMP and provide a recommendation to the Service Milestone Decision Authority as to whether or not the strategy is adequate. - For ACAT ID programs, publish independent DT&E Sufficiency Assessments prior to Milestone B and C decisions with the goal of reducing discovery of performance issues later in the acquisition cycle. - For ACAT IB and IC programs, publish independent DT&E program assessments at the development RFP release decision point and Milestone B and C decisions with the goal of reducing discovery of performance issues later in the acquisition cycle. - When requested by the Secretary or Deputy Secretary of Defense, provide independent developmental test assessments in support of the Under Secretary of Defense Acquisition and Sustainment (USD(A&S)0 and Service Milestone Decision Authorities. - Refine DT&E policies and methodologies addressing DT&E across all Acquisition programs. - Promote the application of sound DT&E and related technical disciplines across the Department's acquisition community and programs. - Implement initiatives that evolve the DT&E 'state of practice' to keep pace with emerging technologies and improve test efficiency to field systems faster. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no significant change between FY 2024 and FY 2025.			
Accomplishments/Planned Programs Subtotals	18.435	19.683	19.944

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605804D8Z / *Development Test & Evaluation*	**Project (Number/Name)** 804 / *Development Test & Evaluation*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605804D8Z / *Development Test & Evaluation*	Project (Number/Name) 048 / *Cybersecurity DT&E for Weapon Systems*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
048: *Cybersecurity DT&E for Weapon Systems*	13.403	6.851	7.111	7.052	-	7.052	7.204	7.355	7.516	7.666	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Cybersecurity Development Test and Evaluation (DT&E) for Weapon Systems project provides dedicated resources to support Major Defense Acquisition Program (MDAP) and Rapid Prototyping/Fielding Program Managers, Chief Developmental Testers, and Lead DT&E Organizations in the development of comprehensive, efficient, and innovative Cybersecurity DT&E strategies to support key acquisition milestones and engineering/programmatic decisions. On behalf of the Under Secretary of Defense for Research and Engineering (USD(R&E)) this project executes the following activities:

- Support acquisition programs in the development of comprehensive, efficient, and innovative Cybersecurity DT&E strategies. Ensure that Cybersecurity DT&E strategies are documented in Test and Evaluation Master Plans (TEMPs). For Acquisition Category (ACAT) ID programs, review and approve/disapprove the Cybersecurity DT&E strategy/plans within the TEMP.
- Support rapid prototyping, rapid fielding, and technology demonstrations efforts in the development of tailored comprehensive, efficient, and innovative Cybersecurity DT&E strategies/plans.
- Support the development of independent technical risk assessments and advise the Secretary on the Cybersecurity, cyber survivability, and resilience posture before any decision to grant Milestone A or B approval, or enter into low-rate initial production or full-rate production for ACAT ID programs or when requested by the Secretary.
- Identify DoD Cybersecurity test infrastructure gaps and support development of the OUSD(R&E) test resources strategic plan.
- Evolve the Cybersecurity DT&E 'state of practice' to keep pace with emerging technologies and improve test efficiency to field systems faster.
- Coordinate with Director, Operational Test and Evaluation to improve Cybersecurity T&E efficiency and make best use of integrated testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Cybersecurity DT&E for Weapon Systems	6.851	7.111	7.052
Description: The Cybersecurity DT&E for Weapon Systems project 048 supports and improves the Cybersecurity DT&E efforts of MDAP, Rapid Prototyping/Fielding efforts, and other Special Interest (SI) acquisition programs as they progress through the acquisition/development lifecycle; and support development of policy and guidance for the conduct of Cybersecurity DT&E within the DoD.			
FY 2024 Plans: - Continue work with Acquisition Program Managers, Chief Developmental Testers, and Lead Development Test & Evaluation (DT&E) organizations to improve Cybersecurity DT&E planning and develop comprehensive and efficient DT&E strategies/ plans through the use of disciplined Developmental Evaluation Framework matrices and Scientific Test and Analysis Techniques			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605804D8Z / *Development Test & Evaluation*	**Project (Number/Name)** 048 / *Cybersecurity DT&E for Weapon Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
(STAT). Help programs develop Cybersecurity T&E objectives that align cybersecurity requirements for security standards, cyber survivability, and operational resilience. - Continue to support rapid prototyping, rapid fielding, and technology demonstrations efforts in the development of tailored comprehensive, efficient, and innovative Cybersecurity DT&E strategies/plans. - Continue to implement the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) 'Shift Left' initiative that focuses on ensuring Cybersecurity Development Test and Evaluation (DT&E) strategies are developed in advance of releasing Technology Maturation and Risk Reduction (TMRR) and Engineering and Manufacturing Development (EMD) Request for Proposals (RFPs) and increasing the amount and quality of data available to support production decisions. - Continue to refine Cybersecurity DT&E policies and methodologies addressing Cybersecurity DT&E across all Acquisition programs. - Assess Cybersecurity performance/resiliency to support development of DT&E Sufficiency Assessments Acquisition Category (ACAT) IDv programs or DT&E program assessments Acquisition Category (ACAT) 1B/1C programs. - When requested by the Secretary or Deputy Secretary of Defense, provide independent Cybersecurity developmental test assessments in support of Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)) and Service Milestone Decision Authorities. - Continue to provide Cybersecurity DT&E subject matter experts to assist programs in building Developmental Evaluation Frameworks (DEFs), conducting Cybersecurity Table Top Exercises to identify potential threat vectors, and assist programs with exercising Phases 1 and 2 of the Department of Defense (DoD) Cybersecurity T&E Process. - Continue to promote the application of sound Cybersecurity DT&E and related technical disciplines across the Department's acquisition community and programs. - Implement initiatives that evolve the Cybersecurity DT&E 'state of practice' to keep pace with emerging technologies and improve test efficiency to field systems faster. - Implement initiatives to guide acquisition programs for how to use Cybersecurity T&E planning and analysis and Cybersecurity tests to identify and mitigate cyber risk in supply chains, development environments, tools and processes. - Continue to collaborate with the Intelligence communities to improve cyber intelligence support to Cybersecurity DT&E. - Continue to work with Lead Development Test and Evaluation (DT&E) organizations to improve Cybersecurity DT&E workforce capability and retention as well as capacity to support earlier integrated contractor and government Cybersecurity DT&E.			
FY 2025 Plans: - Continue work with Acquisition Program Managers, Chief Developmental Testers, and Lead Development Test and Evaluation (DT&E) organizations to improve Cybersecurity DT&E planning and develop comprehensive and efficient DT&E strategies/ plans through the use of disciplined Developmental Evaluation Framework matrices and Scientific Test and Analysis Techniques			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605804D8Z / *Development Test & Evaluation*	**Project (Number/Name)** 048 / *Cybersecurity DT&E for Weapon Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
(STAT). Help programs develop Cybersecurity T&E objectives that align cybersecurity requirements for security standards, cyber survivability, and operational resilience. - Continue to support rapid prototyping, rapid fielding, and technology demonstrations efforts in the development of tailored comprehensive, efficient, and innovative Cybersecurity DT&E strategies/plans. - Continue to implement the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) 'Shift Left' initiative that focuses on ensuring Cybersecurity DT&E strategies are developed in advance of releasing Technology Maturation and Risk Reduction (TMRR) and Engineering and Manufacturing Development (EMD) Request for Proposals (RFPs) and increasing the amount and quality of data available to support production decisions. - Continue to refine Cybersecurity DT&E policies and methodologies addressing Cybersecurity DT&E across all Acquisition programs. - Assess Cybersecurity performance/resiliency to support development of DT&E Sufficiency Assessments Acquisition Category (ACAT) ID programs or DT&E program assessments Acquisition Category (ACAT) 1B/1C programs. - When requested by the Secretary or Deputy Secretary of Defense, provide independent Cybersecurity developmental test assessments in support of Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)) and Service Milestone Decision Authorities. - Continue to provide Cybersecurity DT&E subject matter experts to assist programs in building Developmental Evaluation Frameworks (DEFs), conducting Cybersecurity Table Top Exercises to identify potential threat vectors, and assist programs with exercising Phases 1 and 2 of the Department of Defense (DoD) Cybersecurity T&E Process. - Continue to promote the application of sound Cybersecurity DT&E and related technical disciplines across the Department's acquisition community and programs. - Implement initiatives that evolve the Cybersecurity DT&E 'state of practice' to keep pace with emerging technologies and improve test efficiency to field systems faster. - Implement initiatives to guide acquisition programs for how to use Cybersecurity T&E planning and analysis and Cybersecurity tests to identify and mitigate cyber risk in supply chains, development environments, tools and processes. - Continue to collaborate with the Intelligence communities to improve cyber intelligence support to Cybersecurity DT&E. - Continue to work with Lead DT&E organizations to improve Cybersecurity Development Test and Evaluation (DT&E) workforce capability and retention as well as capacity to support earlier integrated contractor and government Cybersecurity DT&E. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no significant change between FY 2024 and FY 2025.			
Accomplishments/Planned Programs Subtotals	6.851	7.111	7.052

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605804D8Z / *Development Test & Evaluation*	**Project (Number/Name)** 048 / *Cybersecurity DT&E for Weapon Systems*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605804D8Z / *Development Test & Evaluation*	Project (Number/Name) 149 / *Independent Engineering Assessments*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
149: *Independent Engineering Assessments*	0.000	0.000	10.559	10.237	-	10.237	10.040	10.337	10.561	10.772	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project 149 is not a new start project. In FY 2024, USD(R&E) realigned funding from Program Element 0605142D8Z/Project 144, Program Engagement and Independent Assessments, to Project 149, Independent Engineering Assessments. This realignment consolidates DT&E, Cybersecurity DT&E, and Independent Engineering Assessments within this Program Element. In FY 2023 funding for Project 149 can be identified in PE0605142D8Z/Project 144.

A. Mission Description and Budget Item Justification

Independent Engineering Assessments project provides resources to support Major Defense Acquisition Program (MDAP) Program Managers and Chief Engineers/ Systems Engineers in the development of comprehensive, efficient, and innovative engineering strategies/plans to support key acquisition milestones and engineering decisions. For Acquisition Category (ACAT) ID programs, this project also conducts independent engineering assessments, including Independent Technical Risk Assessments (ITRAs), and assessments at the Preliminary and Critical Design Reviews. On behalf of the Under Secretary of Defense for Research and Engineering (USD(R&E)) this project executes the following activities:

- Support acquisition programs in the development of comprehensive, efficient, and innovative systems engineering strategies. Provide Systems Engineering support to ACAT ID programs. For ACAT ID programs, review and approve/disapprove the System Engineering Plans (SEPs) to ensure engineering activities, strategies, and plans are comprehensive and consistent with best practices.
- Monitor and advise USD(R&E) and Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)) on technical and engineering aspects of MDAPs and select alternate acquisition pathway programs to ensure they are adequate to support fielding and the achievement of cost, schedule and performance goals to include readiness, i.e., producibility, reliability, maintainability, sustainment, and other considerations.
- For ACAT ID programs, provide ITRAs to the Defense Acquisition Executive (DAE) at the Milestone (MS) A, B, and C decisions with the goal of identifying technical risk and outlining potential mitigation measures that should be considered during program execution. For select high priority ACAT IB and IC programs, review and approve service conducted ITRAs prior to the applicable milestone decision point.
- For ACAT ID programs, conduct Preliminary and Critical Design Review assessments to inform the Defense Acquisition Executive of technical risks, maturity of the technical baseline, and the program's readiness to proceed in accordance with statute.
- For ACAT ID programs, the ITRA and Preliminary Design Review (PDR) assessments support the DAE decision to approve MS B in accordance with statute. They also establish the basis for the DAE to provide a brief summary report at MS A and B that summarizes ITRA results including identification of any critical technologies or manufacturing processes that have not been successfully demonstrated in a relevant environment in accordance with statute.
- Support acceleration of USD(R&E) modernization initiatives in accordance with the National Defense Strategy (NDS).
- Conduct other technical reviews as requested, such as Nunn-McCurdy certification reviews, Non-Advocate Reviews, focused technical assessments, and software readiness reviews to identify and mitigate program risk.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605804D8Z / *Development Test & Evaluation*	**Project (Number/Name)** 149 / *Independent Engineering Assessments*

- Coordinate with the Services to improve engineering practices for Major Defense Acquisition Programs (MDAPs) and rapid prototyping/fielding programs. Identify, document, and share lessons learned to improve Systems Engineering across the DoD.
- Guide Service and other component organizations in the development planning process to ensure proposed MDAP programs are executable within acceptable levels of risk.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Independent Engineering Assessments	-	10.559	10.237
FY 2024 Plans: - Continue to work with Acquisition Category (ACAT) ID Program Managers, Chief Engineers/Systems Engineers to improve / develop comprehensive and efficient engineering strategies/plans. - Monitor and advise Under Secretary of Defense for Research and Engineering (USD(R&E)) and Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)) on technical and engineering aspects of MDAPs and select alternate acquisition pathway programs. - For ACAT ID programs, review/approve all System Engineering Plans (SEPs) submitted to support milestone reviews. - For ACAT ID programs, conduct Independent Risk Assessment (ITRA) to support the Defense Acquisition Executive (DAE) with the goal of identifying technical risk and outlining potential mitigation measures that should be considered during program execution. Provide ITRA results to the DAE to support preparation of Milestone (MS) A and B Brief Summary reports. - For ACAT ID programs, conduct Preliminary and Critical Design Review assessments to inform the DAE of technical risks, maturity of the technical baseline, and the program's readiness to proceed. - Provide support to engineers and technical leaders to develop and integrate technologies and modernization priorities. - Conduct technical reviews of acquisition programs to confirm program execution in accordance with systems engineering plans. - Provides Specialty Engineering support in the critical disciplines of reliability, software, and manufacturing to ITRAs teams and other assessments.			
FY 2025 Plans: - Continue to work with ACAT ID Program Managers, Chief Engineers/Systems Engineers to improve / develop comprehensive and efficient engineering strategies/plans. - Monitor and advise USD(R&E) and USD(A&S) on technical and engineering aspects of Major Defense Acquisition Programs (MDAPS) and select alternate acquisition pathway programs. - For ACAT ID programs, review/approve all SEPs submitted to support milestone reviews. - For Acquisition Category (ACAT) ID programs, conduct Independent Risk Assessment to support the Defense Acquisition Executive (DAE) with the goal of identifying technical risk and outlining potential mitigation measures that should be considered during program execution. Provide Independent Risk Assessment (ITRA) results to the DAE to support preparation of Milestone (MS) A and B Brief Summary reports.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605804D8Z / *Development Test & Evaluation*	**Project (Number/Name)** 149 / *Independent Engineering Assessments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- For Acquisition Category (ACAT) ID programs, conduct Preliminary and Critical Design Review assessments to inform the Defense Acquisition Executive (DAE) of technical risks, maturity of the technical baseline, and the program's readiness to proceed. - Provide support to engineers and technical leaders to develop and integrate technologies and modernization priorities. - Conduct technical reviews of acquisition programs to confirm program execution in accordance with systems engineering plans. - Provides Specialty Engineering support in the critical disciplines of reliability, software, and manufacturing to Independent Technical Risk Assessments (ITRAs) teams and other assessments. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no significant change between FY 2024 and FY 2025.			
Accomplishments/Planned Programs Subtotals	-	10.559	10.237

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606005D8Z / *Special Activities*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	18.088	18.263	-	18.263	18.649	19.318	20.013	20.413	Continuing	Continuing
399: *Special Activities*	0.000	0.000	18.088	18.263	-	18.263	18.649	19.318	20.013	20.413	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Assistant Secretary of Defense for Mission Capabilities in the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)).

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	18.088	18.410	-	18.410
Current President's Budget	0.000	18.088	18.263	-	18.263
Total Adjustments	0.000	0.000	-0.147	-	-0.147
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustment	-	-	-0.147	-	-0.147

Change Summary Explanation

FY 2025 A reduction of $0.184 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. A funding increase of $0.037 million for Economic Assumptions.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Special Projects	0.000	18.088	18.263
Description: Information is classified.			
FY 2024 Plans:			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606005D8Z / *Special Activities*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Information is classified. ***FY 2025 Plans:*** Information is classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase between FY 2024 and FY 2025 is due to economic assumptions.			
Accomplishments/Planned Programs Subtotals	0.000	18.088	18.263

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

E. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606100D8Z / *Budget and Program Assessments*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	72.758	14.095	14.427	14.272	-	14.272	15.541	13.645	13.929	14.210	-	-
101: *Budget and Program Assessments*	57.555	5.695	8.884	8.941	-	8.941	9.124	9.307	9.504	9.696	-	-
118: *Enterprise VAMOSC*	15.203	8.400	5.543	5.331	-	5.331	6.417	4.338	4.425	4.514	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression, Defend the Homeland, and Build Sustainable and Long-Term Advantage.

This program supports the Office of the Director, Cost Assessment & Program Evaluation (CAPE) by funding assessments that help to resolve budget and programmatic issues across the full range of the Department's activities. Projects that support this effort help to inform leadership on program alternatives, capability concept development, design and cost, as well as the appropriate balance of capabilities across the force. They also help to identify how well the Department is meeting its expenditure goals, and how well the force can implement the National Defense Strategy. These RDT&E resources support critical studies and analyses to assist senior DoD leaders in optimally balancing the lethality, partnership, and reform levels of effort to carry out the National Defense Strategy.

This program provides for analytical research across the entire spectrum of defense issues and concerns. The research agenda focuses on near to long-term problems identified by the Secretary of Defense, addressing difficult and complex questions linked to program alternatives for current and future capabilities and forces in order to enhance senior leadership's deliberations and decision-making.

This program provides the scientific and technical engineering services needed for research studies in the development of models and simulations and the evaluation of current analytical tools and scientific methods used to evaluate and assess weapons systems and warfighting capabilities for warfighting environments and scenarios, and related force structure. Deliverables from this program will include reports, briefings, and analyses designed to illuminate critical issues facing the Department. Outcomes include recommendations for new modeling techniques, programmatic alternatives, and scenario development.

The FY 2024 budget proposal continues resources to support the Enterprise Visibility and Maintainability of Operation and Support Costs (EVAMOSC). EVAMOSC supports CAPE's responsibility to develop and maintain a database of actual operating and support (O&S) costs for major weapons systems, as required in 10 USC Ch. 137, Sec. 2337a and further refined by Sec. 832 of the 2019 NDAA. Additionally, the EVAMOSC data capability will directly support development and reporting of readiness metrics associated with implementation of the National Defense Strategy. In FY 2024, CAPE will continue to design and develop an enterprise data platform to serve as the authoritative source of O&S cost data for major weapon systems.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606100D8Z / *Budget and Program Assessments*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	14.095	14.427	14.272	-	14.272
Current President's Budget	14.095	14.427	14.272	-	14.272
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

No change in FY 2025 from previous PB.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606100D8Z / *Budget and Program Assessments*	Project (Number/Name) 101 / *Budget and Program Assessments*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
101: *Budget and Program Assessments*	57.555	5.695	8.884	8.941	-	8.941	9.124	9.307	9.504	9.696	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program supports the Office of the Director, Cost Assessment & Program Evaluation (CAPE). It funds assessments that help to resolve budget and programmatic issues across the full range of the Department's activities. Projects that support this effort help to inform the leadership on program alternatives, capability concept development, design and cost, the appropriate balance of capabilities across the force, and also to identify how well the Department's expenditures are meeting its goals, and how well the force can implement the Defense strategy.

This program provides for analytical research across the entire spectrum of defense issues and concerns. The research agenda focuses on near to long-term problems identified by the Secretary of Defense, and addresses difficult and complex questions linked to program alternatives for current and future capabilities and forces in order to enhance DoD senior leadership's deliberations and decision-making.

This program provides the scientific and technical engineering services needed for research studies in the development of models and simulations and the evaluation of current analytical tools and scientific methods used to evaluate and assess weapons systems and warfighting capabilities for warfighting environments and scenarios, and related force structure. Deliverables from this program will include reports, briefings, and analyses designed to illuminate critical issues facing the Department. Outcomes include recommendations for new modeling techniques, programmatic alternatives, and scenario development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: OSD Support for Programming Budget	5.695	8.884	8.941
Description: This program provides for analytical research across the entire spectrum of defense issues and concerns. The research agenda focuses on near to long-term problems identified by the Secretary of Defense, and addresses difficult and complex questions linked to program alternatives for current and future capabilities and forces in order to enhance senior leadership deliberations and decision-making. ***FY 2024 Plans:*** Studies, analyses, and assessments will be focused on: - Improving cost analysis tools to inform program, budget, and Defense Acquisition Board reviews. - Supporting the Weapon System Acquisition Reform Act (WSARA) requirements by independently assessing, analyzing, and where appropriate, updating cost indices, inflation rates, and escalation rates used in preparing the President's Budget for major acquisition programs.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606100D8Z / *Budget and Program Assessments*	**Project (Number/Name)** 101 / *Budget and Program Assessments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Facilitate CAPEs new role in the annual Sustainment Review and Independent Cost Estimate (ICE) process. ***FY 2025 Plans:*** Studies, analyses, and assessments will be focused on: - Improving cost analysis tools to inform program, budget, and Defense Acquisition Board reviews. - Supporting the Weapon System Acquisition Reform Act (WSARA) requirements by independently assessing, analyzing, and where appropriate, updating cost indices, inflation rates, and escalation rates used in preparing the President's Budget for major acquisition programs. - Facilitate CAPEs new role in the annual Sustainment Review and Independent Cost Estimate (ICE) process. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 slight funding increase will support the improvement of cost analysis tools needed to assist with Defense Acquisition Board Reviews as well as internal adjustments to support priority requirements. Resources will fund a mix of research activities to carry out the plans stated above.			
Accomplishments/Planned Programs Subtotals	5.695	8.884	8.941

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

A mix of competitive contracts with commercial firms and research provided by university-affiliated research centers (UARCs), and Federally Funded Research and Development Centers (FFRDCs).

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606100D8Z / *Budget and Program Assessments*	Project (Number/Name) 118 / *Enterprise VAMOSC*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
118: *Enterprise VAMOSC*	15.203	8.400	5.543	5.331	-	5.331	6.417	4.338	4.425	4.514	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Enterprise Visibility and Management of Operating and Support Cost (EVAMOSC) addresses CAPE's responsibility to develop and maintain a database of actual operating and support (O&S) costs for major weapons systems, as required in 10 USC Ch. 137, Sec. 2337a and further refined by Sec. 832 of the 2019 National Defense Authorization Act (NDAA). Additionally, the EVAMOSC data capability will directly support development and reporting of readiness metrics associated with implementation of the National Defense Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Enterprise Visibility and Maintainability of Operating and Support Costs (EVAMOSC)	8.400	5.543	5.331
Description: EVAMOSC addresses CAPE's responsibility to develop and maintain a database of actual operating and support (O&S) costs for major weapons systems, as required in 10 USC Ch. 137, Sec. 2337a and further refined by Sec. 832 of the 2019 NDAA. Additionally, the EVAMOSC data capability will directly support development and reporting of readiness metrics associated with implementation of the National Defense Strategy. ***FY 2024 Plans:*** Design and develop an enterprise data platform to serve as the authoritative source of O&S cost data for major weapon systems: - Develop data ingestion pipelines, business rules, logic models, and data catalogues to support collection, reporting, and analysis of enterprise-level O&S cost data. - Develop system administration, security, and user management functionality for an enterprise data asset anticipated to provide services to over 3,000 users across the DoD. - Construct an advanced database in GovCloud, acquire data from more than 75 source data systems, and map this data to all DoD weapons systems using standardized O&S cost data definitions. ***FY 2025 Plans:*** Design and develop an enterprise data platform to serve as the authoritative source of O&S cost data for major weapon systems: - Develop data ingestion pipelines, business rules, logic models, and data catalogues to support collection, reporting, and analysis of enterprise-level O&S cost data. - Develop system administration, security, and user management functionality for an enterprise data asset anticipated to provide services to over 3,000 users across the DoD.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606100D8Z / *Budget and Program Assessments*	**Project (Number/Name)** 118 / *Enterprise VAMOSC*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Construct an advanced database in an Amazon Web Service Cloud environment, acquire data from more than 75 source data systems, and map this data to all DoD weapons systems using standardized O&S cost data definitions. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease supports the development and maintenance of an enterprise database for actual operating and support costs. The associated funding will be prioritized to continue this important Congressional interest to improve O&S cost data collection. Resources will fund a mix of research activities to carry out the plans stated above.			
Accomplishments/Planned Programs Subtotals	8.400	5.543	5.331

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

A mix of competitive contracts with commercial firms and research provided by university-affiliated research centers (UARCs) and Federally Funded Research and Development Centers (FFRDCs).

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606114D8Z / *Support for Analysis Working Group*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	4.279	4.200	2.814	-	2.814	3.014	3.864	4.757	5.843	Continuing	Continuing
109: *Analysis Working Group Support*	0.000	4.279	4.200	2.814	-	2.814	3.014	3.864	4.757	5.843	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiative to Take Care of People, and Build Sustainable and Long-Term Advantage.

This program supports the Office of the Director, Cost Assessment & Program Evaluation (CAPE). It funds assessments that help the Analysis Working Group (AWG) to assist the Secretary and Deputy Secretary in guiding the analytic community and ensuring strategic analysis products are robust and of the highest quality. The end goal is an analytic enterprise that is agile, responsive, and provides sound decision support for the Secretary and Deputy Secretary. This program provides for analytic research across the Department to guide reform of the Departments analytic enterprise. Projects that support this effort help to develop a high performing and innovative analytic enterprise with the right policies, structures, people, and tools to support timely strategic decision that create an advantage for the U.S Military now and into the future.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	4.279	4.200	2.814	-	2.814
Current President's Budget	4.279	4.200	2.814	-	2.814
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

No change in FY 2025 from previous PB.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606114D8Z / *Support for Analysis Working Group*	Project (Number/Name) 109 / *Analysis Working Group Support*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
109: *Analysis Working Group Support*	0.000	4.279	4.200	2.814	-	2.814	3.014	3.864	4.757	5.843	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program supports the Office of the Director, Cost Assessment & Program Evaluation (CAPE). It funds assessments that help the Analysis Working Group (AWG) to assist the Secretary and Deputy Secretary in guiding the analytic community and ensuring strategic analysis products are robust and of the highest quality. The end goal is an analytic enterprise that is agile, responsive, and provides sound decision support for the Secretary and Deputy Secretary. This program provides for analytic research across the Department to guide reform of the Departments analytic enterprise. Projects that support this effort help to develop a high performing and innovative analytic enterprise with the right policies, structures, people, and tools to support timely strategic decisions that create an advantage for the U.S Military now and into the future.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Analysis Working Group Support	4.279	4.200	2.814
Description: The Analysis Working Group (AWG) was established to marshal and guide the Department's analytic capabilities. This group is advancing key strategic priorities by improving the analytic underpinning available for senior leader decisions and addressing necessary enterprise reforms (e.g., data sharing and knowledge management) across the analytic community.			
FY 2024 Plans: Studies, analysis and assessments will be focused on: -Establishing clear priorities and standards to focus analyst on decision support -Improving transparency across the analytic community -Improving the quality of and expanding access to data -Evolve the methods and tools used in strategic analysis			
FY 2025 Plans: Studies, analysis and assessments will be focused on: -Establishing clear priorities and standards to focus analyst on decision support -Improving transparency across the analytic community -Improving the quality of and expanding access to data -Evolve the methods and tools used in strategic analysis			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606114D8Z / *Support for Analysis Working Group*	**Project (Number/Name)** 109 / *Analysis Working Group Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
No change.			
Accomplishments/Planned Programs Subtotals	4.279	4.200	2.814

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

A mix of research provided by university-affiliated research centers (UARCs), Federally Funded Research and Development Centers (FFRDCs) and competitive contracts with commercials firms.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606135D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) Activities*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	12.394	17.247	9.262	-	9.262	5.484	5.691	5.805	5.921	Continuing	Continuing
069: *Foundational Enablers*	0.000	12.394	17.247	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
086: *AI/ML Scaffolding*	0.000	0.000	0.000	9.262	-	9.262	5.484	5.691	5.805	5.921	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Chief Digital and Artificial Intelligence Officer (CDAO) supports the Department's initiatives to build enduring advantage and build a resilient Joint Force and defense ecosystem. The CDAO is responsible for strengthening and integrating data, artificial intelligence, and digital solutions in the Department in support of the National Defense Strategy and Section 1513 of the National Defense Authorization Act (NDAA) for FY 2023. The functions of the CDAO are as follows: lead and oversee the DoD's strategy development and policy formulation for data, analytics, and AI; break down barriers to data and AI adoption; create enabling digital infrastructure and services; selectively scale and provide digital and AI-enabled solutions focused on enterprise and joint use cases; and surge digital services. The CDAO will continue priority projects that align to the mission. This includes expanding the enterprise data repository; establishing a responsible AI ecosystem; developing the AI and Data Accelerator (ADA) initiative; and developing a Data, Analytics, and AI Adoption Strategy. These various lines of effort will support the overarching mission of accelerating the Department's adoption of data, analytics, and AI to preserve decision advantage across the Joint Force. The mission of the AI/ML Scaffolding project is developing, providing, brokering, and advising on the infrastructure, data, tools, services and best practices needed to accelerate appropriate AI/ML development and adoption. Responsible Artificial Intelligence (RAI) is critical to decision makers, warfighters, industry partners, and public trust in the technologies that the Department develops and deploys CDAO RAI effort:

- Operationalizes the DoD AI Ethical Principles
- Oversees the Deputy Secretary of Defense's RAI Strategy and Implementation Pathway (S&IP)
- Coordinates with offices throughout the DoD and federal government
- Integrates RAI to build capacity of best practices and tools for AI

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606135D8Z *I Chief Digital and Artificial Intelligence Officer (CDAO) Activities*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	13.132	17.247	9.262	-	9.262
Current President's Budget	12.394	17.247	9.262	-	9.262
Total Adjustments	-0.738	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.479	-			
• WHS Transfer	-0.259	-	-	-	-

Change Summary Explanation

FY 2023 SBIR/STTR transfer -$0.479; WHS transfer -$0.259

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606135D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) Activities*	Project (Number/Name) 069 / *Foundational Enablers*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
069: *Foundational Enablers*	0.000	12.394	17.247	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This project is AI Acquisition Training.

The DoD must overhaul its acquisition processes and prioritize technical and acquisition training as highlighted in the National Defense Strategy for 2018, the 2018 DoD Artificial Intelligence Strategy, and the 2021 NSCAI Final Report. This funding will provide the basis of the training platform -Digital DNA Pilot Program- in partnership with OUSD(A&S).

It is also incumbent on the Department to ensure all its AI-enabled systems will be safe and adhere to ethical standards and that they are used in a manner that contributes to the efficiency, effectiveness, and legitimacy of the Department's AI capabilities. This requirement funds activities to develop, procure and maintain the necessary commercial and DoD-customized tools to put the DoD AI Ethical Principles into practice across the entire AI product lifecycle.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Artificial Intelligence (AI) Acquisition Training	12.394	17.247	-
Description: The DoD must overhaul its acquisition processes and prioritize technical and acquisition training as highlighted in the National Defense Strategy for 2018, the DoD Artificial Intelligence Strategy for 2018, and the 2021 NSCAI Final Report. This funding is earmarked to provide the basis of the training platform - DoD AI Acquisition Training Platform - in partnership with OUSD(A&S). ***FY 2024 Plans:*** In FY 2024, CDAO plans to continue developing AI-specific acquisition content for existing Defense Acquisition University platforms and to build a DoD AI training portal for DoD components acquiring AI capabilities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Beginning in FY 2025 the Acquisition Ecosystem is realigned under PE 0604123D8Z.			
Accomplishments/Planned Programs Subtotals	12.394	17.247	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606135D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) Activities*	**Project (Number/Name)** 069 / *Foundational Enablers*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606135D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) Activities*	Project (Number/Name) 086 / *AI/ML Scaffolding*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
086: *AI/ML Scaffolding*	0.000	0.000	0.000	9.262	-	9.262	5.484	5.691	5.805	5.921	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The mission of the AI/ML Scaffolding project is developing, providing, brokering, and advising on the infrastructure, data, tools, services and best practices needed to accelerate appropriate AI/ML development and adoption. Responsible Artificial Intelligence (RAI) is critical to decision makers, warfighters, industry partners, and public trust in the technologies that the Department develops and deploys.

The CDAO RAI effort:

- Operationalizes the DoD AI Ethical Principles
- Oversees the Deputy Secretary of Defense's RAI Strategy and Implementation Pathway (S&IP)
- Coordinates with offices throughout the DoD and federal government
- Integrates RAI to build capacity of best practices and tools for AI

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Responsible Artificial Intelligence (RAI)	0.000	0.000	9.262
Description: Responsible Artificial Intelligence (RAI) is critical to decision makers, warfighters, industry partners, and public trust in the technologies that the Department develops and deploys The CDAO RAI effort: - Operationalizes the DoD AI Ethical Principles - Oversees the Deputy Secretary of Defense's RAI Strategy and Implementation Pathway (S&IP) - Coordinates with offices throughout the DoD and federal government - Integrates RAI to build capacity of best practices and tools for AI			
FY 2024 Plans: In FY 2024, CDAO develops, maintains and customized DoD governance tools, and to procure and maintain commercially available tools to support RAI activities.			
FY 2025 Plans: In FY 2025 the RAI effort will focus on: 1. RAI Tools			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606135D8Z / *Chief Digital and Artificial Intelligence Officer (CDAO) Activities*	**Project (Number/Name)** 086 / *AI/ML Scaffolding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- RAI Knowledge Sharing Tools (RAI Portal, Use Case Repository, Incident Repository) - RAI Governance Tools (Executive Dashboard, RAI Process Flow Tool, RAI Program Management Tool, RAI Budgeting Tool) - Auditability Tools (Bias Bounty, System Cards) - HSI/HMT Tools (HMT Red Teaming Guidebook & Tools, BlueSky Integration) - Tool Integration (Explainability, OOD, Competence Estimation, Privacy Risk, Robustness, Algorithmic Recourse, Imitation/ Extraction Risk, Continuous Monitoring Tools) 2. RAI Best Practices - RAI Framework (RAI Toolkit) - RAI Risk Resources (Risk Management Framework and Profiles Development, Civilian Harms & Mitigation Project, Harms/ Impact Analysis, High Consequence Risk & Tradeoffs Framework) - Integrating Generative AI Responsibly - RAI Workforce and Organization Development (RAI 101, RAI Awareness Training) 3. RAI Outreach - Partnerships and Policy (Mission Partnerships [including Integration and Piloting of RAI Tools], RAI Data and AI Review Board, RAI Community of Interest, RAI Academic Consortium) ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The continuous activity from FY 2024 to FY 2025, starting to transition some activities from development into maintaining the RAI tools.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	9.262

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606225D8Z / *ODNA Technology & Resource Analysis*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	16.816	3.258	3.386	3.403	-	3.403	3.478	3.551	3.626	3.699	-	-
106: *Technology and Resource Analysis*	16.816	3.258	3.386	3.403	-	3.403	3.478	3.551	3.626	3.699	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland, Deter Aggression and Prevail in Conflict, and Build Enduring Advantage. The Office of Net Assessment develops and coordinates analyses that examine the standing trends and future prospects of U.S. and other military capabilities and military potential. The net assessments address near and long-term problems and opportunities for the U.S. military forces to help counter technological advantages of potential U.S. adversaries. These efforts will pursue research to analyze the future security environment.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	3.323	3.386	3.430	-	3.430
Current President's Budget	3.258	3.386	3.403	-	3.403
Total Adjustments	-0.065	0.000	-0.027	-	-0.027
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Realignment of actuals	-0.065	-	-	-	-
• Programmatic Adjustments	-	-	-0.027	-	-0.027

Change Summary Explanation

FY 2023 decrease from the previous President's Budget is in support of realignment of actuals.
FY 2025 decrease from the previous President's Budget is in support of slight programmatic adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606225D8Z / *ODNA Technology & Resource Analysis*	Project (Number/Name) 106 / *Technology and Resource Analysis*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
106: *Technology and Resource Analysis*	16.816	3.258	3.386	3.403	-	3.403	3.478	3.551	3.626	3.699	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Office of Net Assessment develops and coordinates analyses that examine the standing trends and future prospects of U.S. and other military capabilities and military potential. The net assessments address near and long-term problems and opportunities for the U.S. military forces to help counter technological advantages of potential U.S. adversaries. These efforts will pursue research to analyze the future security environment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Technology and Resource Analysis	3.258	3.386	3.403

Description: The Office of Net Assessment develops and coordinates analyses that examine the standing trends and future prospect of U.S. and other military capabilities and military potential. The net assessments address near and long-term problems and opportunities for the U.S. military forces to help counter technological advantages of potential U.S. adversaries. These efforts will pursue research to analyze the future security environment.

FY 2024 Plans:

Continue and initiate efforts to pursue research that identifies new technological innovations and analyzes the future security environment, including:
- Continuing analysis on future concepts of operation and possible courses of action and responses to emerging capabilities.
- Continuing investment in a Biosciences Net Assessment and initiating analysis in future warfare areas to assess potential revolutionary advances.
- Initiating analysis in information areas for potential advanced capability demonstrations and a potential Net Assessment.

FY 2025 Plans:

Continue and initiate efforts to pursue research that identifies new technological innovations and analyzes the future security environment, including:
- Continuing analysis on future concepts of operation and possible courses of action and responses to emerging capabilities.
- Continuing investment in a Biosciences Net Assessment and initiating analysis in future warfare areas to assess potential revolutionary advances.
- Initiating analysis in information areas for potential advanced capability demonstrations and a potential Net Assessment.

FY 2024 to FY 2025 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606225D8Z / *ODNA Technology & Resource Analysis*	**Project (Number/Name)** 106 / *Technology and Resource Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 decrease from the previous President's Budget is in support of slight programmatic adjustments.			
Accomplishments/Planned Programs Subtotals	3.258	3.386	3.403

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606300D8Z / *Defense Science Board*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	2.409	2.352	6.536	-	6.536	6.861	7.203	7.563	7.941	Continuing	Continuing
807: *Defense Science Board*	0.000	2.409	2.352	6.536	-	6.536	6.861	7.203	7.563	7.941	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

The Secretary of Defense established the Defense Science Board (DSB) as a discretionary advisory committee, in accordance with the Federal Advisory Committee Act (FACA) (5 U.S.C., Appendix) and 41 C.F.R. § 102- 3.50(d). The DSB provides independent advice and recommendations on matters supporting the Department of Defense's (DoD) scientific and technical enterprise to the Secretary of Defense, the Deputy Secretary of Defense, the Under Secretary of Defense for Research & Engineering, the Chairman of the Joint Chiefs of Staff, and other Department officials. The DSB focuses on matters concerning science, technology, manufacturing, acquisition process, and other topics of special interest to the DoD in response to specific tasks, and is not established to advise on individual DoD procurements. The DSB is concerned with the pressing and complex technological problems facing the DoD in such areas as research, engineering, organizational structure and process, business and functional concepts, and manufacturing, and ensures identification of new technologies and new applications of technology in those areas to strengthen national security.

The funds provided allow for the procurement of professional, analytical, and administrative services, to include the tasks of planning, preparation, execution, administrative support, logistics, documentation, and travel for DSB, Subcommittee and Task Force meetings and conferences. The vendors contracted provide essential services in support of the DSB and the DSB staff in the following areas: technical, business, and administrative planning; organizing, managing, coordinating, and tracking (e.g., cost, schedule, and deliverables); and performance management, data management, and subcontract management along with refining initial and final reports of the various study groups.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606300D8Z / *Defense Science Board*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	2.409	2.352	2.389	0.000	2.389
Current President's Budget	2.409	2.352	6.536	0.000	6.536
Total Adjustments	0.000	0.000	4.147	-	4.147
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	4.134	-	4.134
• Program Adjustments (Economic Assumption)	-	-	0.013	-	0.013

Change Summary Explanation

An increase of $4.200 million is due to a realignment from program element 0602251D8Z and 0603375D8Z and will allow the Defense Science Board to support DoD directed Quick Task Forces (QTF), task forces and other studies directed by Congress.

In addition, a reduction of $0.066 million was applied to DoD overall funding reductions, which were spread to mitigate impact. A funding increase of $0.013 million is for Economic Assumptions.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense Science Board	2.409	2.352	6.536
Description: The Defense Science Board (DSB) was authorized by the Secretary of Defense to resume operations on July 2, 2021 after the conduct of the 2021 Zero-Based Review (ZBR) of DoD advisory committees. In that authorization, the Secretary of Defense established the DSB parent Board at 40 members, and directed that all DSB work be conducted in response to written Terms of Reference (ToR) from the Under Secretary of Defense (Research and Engineering) (USD(R&E). Since resumption, the DSB has continued work on seventeen (17) ToR, four (4) of which were directed prior to the ZBR. The thirteen (13) new ToR signed by the USD(R&E) since the ZBR direct the DSB to conduct two (2) Summer Studies, establish two (2) Permanent Subcommittees, support one Tabletop Exercise, and create nine (9) additional Task Forces. Five (5) of the Task Forces concerned matters directed by Congress in National Defense Authorization Act (NDAA) legislative acts. The DSB has conducted Quarterly meetings, Task Force meetings, Summary Study meetings, and briefed senior leaders at nearly all Combatant Commands, Services, and multiple federal agencies on advice and recommendations regarding the DoD's scientific and technical enterprise, as directed by the USD(R&E).			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606300D8Z / *Defense Science Board*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The DSB utilized support contracts to provide professional, analytical, and administrative services to facilitate the Board's operations. ***FY 2024 Plans:*** The DSB will conduct a Summer Study, operate two Permanent Task Forces, and operate at least six Task Forces to provide independent advice and recommendations to DoD leadership in accordance with USD(R&E) and Congressional direction. The DSB will utilize contracted services to provide for the procurement of professional, analytical, and administrative services, to include the tasks of planning, preparation, execution, administrative support, logistics, documentation, and travel for DSB, Subcommittee and Task Force meetings and conferences. ***FY 2025 Plans:*** The DSB will conduct a Summer Study, operate two Permanent plans to continue operations of the parent Board, a minimum of two (2) Permanent Subcommittees, and multiple Task Forces as directed by the USD(R&E). The DSB will utilize contracted services to procure professional, analytical, and administrative services, to include the tasks of planning, preparation, execution, administrative support, logistics, documentation, and travel for DSB, Subcommittee and Task Force meetings and conferences. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $4.200 million is due to a realignment from program element 0602251D8Z and 0603375D8Z and will allow the Defense Science Board to support DoD directed Quick Task Forces (QTF), task forces and other studies directed by Congress.			
Accomplishments/Planned Programs Subtotals	2.409	2.352	6.536

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606301D8Z / *Aviation Safety Technologies*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.213	1.885	-	1.885	1.885	1.885	1.885	1.885	Continuing	Continuing
057: *Force Safety & Occupational Health (FSOH)*	0.000	0.000	0.213	1.885	-	1.885	1.885	1.885	1.885	1.885	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This effort supports the Department's initiative of Taking Care of Our People. The requirements are aligned to Department of Defense (DoD)/Federal strategic direction to include the DoD Digital Modernization Strategy, DoD and Federal Data Strategies, Personnel and Readiness Strategy for 2030, and the DoD Safety and Occupational Health (SOH) Strategic Plan.

To protect the lives, safety, health, and welfare of the DoD workforce, and the significant investments we make in our weapons systems, platforms, and infrastructure, we must acknowledge and provide adequate resources for SOH. Ensuring the safety of our workforce requires an enduring safety culture, where regular and consistent hazard, near-miss and mishap reporting is the norm – at least on-par with industry and the private sector aviation and industrial communities. According to the 2020 National Commission on Military Aviation Safety (NCMAS) report, this begins with a centralized system and processes with which to gather, synthesize, and report Safety information at all levels. In addition to the NCMAS report, 10 United States Code Service (USCS) 184 directs the Department to establish uniform data collection standards and a centralized collection system for mishap information. Currently, the DoD collects SOH information from disparate, incomplete, and often overlapping sources - a process that hinders opportunities for timely and in-depth analysis to support Department-wide mishap prevention efforts. Many of the DoD Components, including some of the Combatant Commands, do not have a safety information management system to enter, track, or manage mishaps, near-misses, or hazards. Without such a system and process, the Department is unable to adequately identify and analyze trends across the DoD Components, share lessons learned, and track corrective actions in response to recommendations. This effort addresses the Congressional requirements and fulfills capability gaps through modernization of the Force Risk Reduction tool to a safety information case management system. The system will be based on the Department’s safety processes and data standards, which are being incorporated into Department of Defense Instruction (DoDI) 6055.07 “Mishap Notification, Investigation, Reporting, and Record Keeping.” A central SOH information management system based on the safety business processes and data standards will provide the capability to those DoD Components without an existing automated tool and will be available for all DoD Components. It will continue to consolidate all SOH information and provide leaders with current, accurate, and actionable safety information and insights to forecast, mitigate, and prevent future mishaps, injuries, and occupational illnesses, and to drive safety innovation and modernization. Failure to receive this funding will result in non-compliance with Title 10 U.S.C. §184 requirements. Expanding FR2 functionality is the most efficient and effective approach to providing a compliant centralized safety collection and information management capability and repository. Without this funding, the Department will continue to lack a complete understanding of safety impacts to our personnel and operational readiness. Mishap reporting will continue to be inconsistent, and the Department will struggle to manage and share recommendations and lessons learned across the enterprise. These persistent gaps will negatively impact our ability to make timely and informed risk decisions and resource investments for mishap prevention solutions. Oversight of the Department’s safety enterprise requires a deliberate data informed focus and priority commensurate with the Department’s overall governance approach.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606301D8Z / *Aviation Safety Technologies*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.213	1.885	-	1.885
Current President's Budget	0.000	0.213	1.885	-	1.885
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

No change in FY 2025 from previous PB.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606301D8Z / *Aviation Safety Technologies*	Project (Number/Name) 057 / *Force Safety & Occupational Health (FSOH)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
057: *Force Safety & Occupational Health (FSOH)*	0.000	0.000	0.213	1.885	-	1.885	1.885	1.885	1.885	1.885	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This effort supports the Department's initiative of Taking Care of Our People. The requirements are aligned to Department of Defense (DoD)/Federal strategic direction to include the DoD Digital Modernization Strategy, DoD and Federal Data Strategies, Personnel and Readiness Strategy for 2030, and the DoD Safety and Occupational Health (SOH) Strategic Plan.

To protect the lives, safety, health, and welfare of the DoD workforce, and the significant investments we make in our weapons systems, platforms, and infrastructure, we must acknowledge and provide adequate resources for SOH. Ensuring the safety of our workforce requires an enduring safety culture, where regular and consistent hazard, near-miss and mishap reporting is the norm – at least on-par with industry and the private sector aviation and industrial communities. According to the 2020 National Commission on Military Aviation Safety (NCMAS) report, this begins with a centralized system and processes with which to gather, synthesize, and report Safety information at all levels. In addition to the NCMAS report, 10 United States Code Service (USCS) 184 directs the Department to establish uniform data collection standards and a centralized collection system for mishap information. Currently, the DoD collects SOH information from disparate, incomplete, and often overlapping sources - a process that hinders opportunities for timely and in-depth analysis to support Department-wide mishap prevention efforts. Many of the DoD Components, including some of the Combatant Commands, do not have a safety information management system to enter, track, or manage mishaps, near-misses, or hazards. Without such a system and process, the Department is unable to adequately identify and analyze trends across the DoD Components, share lessons learned, and track corrective actions in response to recommendations. This effort addresses the Congressional requirements and fulfills capability gaps through modernization of the Force Risk Reduction tool to a safety information case management system. The system will be based on the Department’s safety processes and data standards, which are being incorporated into Department of Defense Instruction (DoDI) 6055.07 “Mishap Notification, Investigation, Reporting, and Record Keeping.” A central SOH information management system based on the safety business processes and data standards will provide the capability to those DoD Components without an existing automated tool and will be available for all DoD Components. It will continue to consolidate all SOH information and provide leaders with current, accurate, and actionable safety information and insights to forecast, mitigate, and prevent future mishaps, injuries, and occupational illnesses, and to drive safety innovation and modernization. Failure to receive this funding will result in non-compliance with Title 10 U.S.C. §184 requirements. Expanding FR2 functionality is the most efficient and effective approach to providing a compliant centralized safety collection and information management capability and repository. Without this funding, the Department will continue to lack a complete understanding of safety impacts to our personnel and operational readiness. Mishap reporting will continue to be inconsistent, and the Department will struggle to manage and share recommendations and lessons learned across the enterprise. These persistent gaps will negatively impact our ability to make timely and informed risk decisions and resource investments for mishap prevention solutions. Oversight of the Department’s safety enterprise requires a deliberate data informed focus and priority commensurate with the Department’s overall governance approach.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606301D8Z / *Aviation Safety Technologies*	**Project (Number/Name)** 057 / *Force Safety & Occupational Health (FSOH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Force Safety & Occupational Health (FSOH)	0.000	0.213	1.885
Description: Modernize Force Risk Reduction with a safety information case management tool for entering, tracking, and managing the lifecycle of mishaps, near misses, and hazards from identification through investigation to mitigation, as well as the sharing of lessons learned and best practices. ***FY 2024 Plans:*** Develop safety information case management tool based on defined and approved safety data business processes and standards and conduct pilot program with select DoD Components that do not have an existing safety information management system. ***FY 2025 Plans:*** Update tool based on feedback from pilot participants, ensure information security, develop data transmission feed to Advana, and expand development from pilot to initial operational capability for additional DoD Components without an existing system. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 increase supports ongoing evolution of the safety information case management tool to expand to additional DoD Component users, conduct further testing as needed, address deficiencies, ensure capabilities meet safety data and process standards, provide training, and prepare for implementation.			
Accomplishments/Planned Programs Subtotals	0.000	0.213	1.885

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606771D8Z / *Cyber Resiliency & Cybersecurity Policy*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	34.450	50.077	45.194	40.401	-	40.401	16.863	16.713	16.981	17.300	Continuing	Continuing
145: *Cyber Resiliency & Cybersecurity Policy*	26.699	38.524	45.194	40.401	-	40.401	16.863	16.713	16.981	17.300	Continuing	Continuing
147: *Securing the Defense Industrial Base (DIB): Cybersecurity Maturity Model Certification (CMMC)*	7.751	11.553	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Cyber Resiliency & Cybersecurity Policy program supports the efforts of OUSD A&S, focusing on the defense of the Department's critical mission weapon systems and Defense Critical Infrastructure from cyber attack, protecting the Department's sensitive unclassified information residing within the Defense Industrial Base (DIB) sector and supply chain, and capability portfolio management for Joint Cyber Capabilities used by the Cyber Mission Force. This program funds the following critical efforts:

1) Cybersecurity for Weapon Systems and Critical Infrastructure: Lead the Department's Strategic Cybersecurity Program (SCP) to continue critical weapon systems and defense infrastructure cybersecurity assessments and mitigations and cyber harden priority DoD missions.

OASD(A)/Cyber Warfare Directorate Cyber Resiliency efforts are aligned with the following initiatives:
Assess:
- Conduct mission based cyber risk assessments for priority Defense Missions in support of CCMDs.
- Conduct Deep Cyber Resiliency Assessments (DCRA) in support of CCMDs and asset owners.
- Conduct CCMD Mission Analytics in support of the Joint Staff and CCMDs.

Inventory:
- Develop, sustain, and employ the Cyber Risk Mitigation Tool (CRMT), an Enterprise-wide decision support tool for tracking and prioritizing cyber vulnerability assessments and mitigations.

Prioritize:
- Prioritize and advocate for Cyber Risk Mitigations based upon mission analysis conducted by program offices, the National Security Agency (NSA), Deep Cyber Resiliency Assessment teams, USCYBERCOM (USCC), and other cybersecurity professionals.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606771D8Z / *Cyber Resiliency & Cybersecurity Policy*

2) Weapon System Cyber Security - Cybersecurity Supply Chain Risk Management Pilots (C-SCRM)
In collaboration with DoD CIO, partner with other DoD organizations and the DIB sector to demonstrate cost-effective and scalable cybersecurity services that augment and/or enhance existing commercial capabilities and services. Focus on identifying options and assessing the efficacy of cybersecurity services for small-to-medium sized DIB companies that are critical to the DoD supply chain but lack sufficient cybersecurity capabilities to protect CUI.

3) Capability Portfolio Management for Cyberspace Operations

Conduct Capability Portfolio Management of the Joint Cyber Capabilities employed by Cyber Mission Force in collaboration with USCYBERCOM. Assess the capabilities of JWCA for supporting the conduct of offensive and defensive cyberspace operations.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	51.901	45.194	43.160	-	43.160
Current President's Budget	50.077	45.194	40.401	-	40.401
Total Adjustments	-1.824	0.000	-2.759	-	-2.759
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.824	-			
• Defense-Wide Topline Adjustment	-	-	-2.759	-	-2.759

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 145: *Cyber Resiliency & Cybersecurity Policy*		
Congressional Add: *Deep Cyber Resiliency Assessments*	20.000	-
Congressional Add Subtotals for Project: 145	20.000	-
Congressional Add Totals for all Projects	20.000	-

Change Summary Explanation
FY 2025 decrease to fund higher departmental priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606771D8Z / *Cyber Resiliency & Cyber security Policy*	Project (Number/Name) 145 / *Cyber Resiliency & Cybersecurity Policy*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
145: *Cyber Resiliency & Cybersecurity Policy*	26.699	38.524	45.194	40.401	-	40.401	16.863	16.713	16.981	17.300	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland and Build Sustainable and Long-Term Advantage in support of the NDS and the DoD Cyber Strategy.

The Cyber Resiliency & Cybersecurity Policy program supports the efforts of OUSD (A&S), focusing on the defense of the Department’s critical mission weapon systems and Defense Critical Infrastructure from cyber attack, protecting the Department’s sensitive unclassified information residing within the Defense Industrial Base (DIB) sector and supply chain, and capability portfolio management for Joint Cyber Capabilities used by the Cyber Mission Force. This program funds the following critical efforts:

1) Cybersecurity for Weapon Systems and Critical Infrastructure: Lead the Department’s Strategic Cybersecurity Program (SCP) to continue critical weapon systems and defense infrastructure cybersecurity assessments and mitigations and cyber harden priority DoD missions.

OASD(A)/Cyber Warfare Directorate Cyber Resiliency efforts are aligned with the following initiatives:
Assess:
- Conduct mission based cyber risk assessments for priority Defense Missions in support of CCMDs.
- Conduct Deep Cyber Resiliency Assessments (DCRA) in support of CCMDs and asset owners.
- Conduct CCMD Mission Analytics in support of the Joint Staff and CCMDs.

Inventory:
- Develop, sustain, and employ the Cyber Risk Mitigation Tool (CRMT), an Enterprise-wide decision support tool for tracking and prioritizing cyber vulnerability assessments and mitigations.

Prioritize:
- Prioritize and advocate for Cyber Risk Mitigations based upon mission analysis conducted by program offices, the National Security Agency (NSA), Deep Cyber Resiliency Assessment teams, USCYBERCOM (USCC), and other cybersecurity professionals.

2) Weapon System Cyber Security - Cybersecurity Supply Chain Risk Management Pilots (C-SCRM)

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606771D8Z / *Cyber Resiliency & Cyber security Policy*	**Project (Number/Name)** 145 / *Cyber Resiliency & Cybersecurity Policy*

In collaboration with DoD CIO, partner with other DoD organizations and the DIB sector to demonstrate cost-effective and scalable cybersecurity services that augment and/or enhance existing commercial capabilities and services. Focus on identifying options and assessing the efficacy of cybersecurity services for small-to-medium sized DIB companies that are critical to the DoD supply chain but lack sufficient cybersecurity capabilities to protect CUI.

3) Capability Portfolio Management for Cyberspace Operations

Conduct Capability Portfolio Management of the Joint Cyber Capabilities employed by Cyber Mission Force in collaboration with USCYBERCOM. Assess the capabilities of JWCA for supporting the conduct of offensive and defensive cyberspace operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Cyber Resiliency & Cybersecurity Policy	18.524	45.194	40.401
Description: FY 2023 Accomplishments: Assessments: Conduct Cyber Risk Assessments in support of CCMDs: Combatant Commands Mission Level Cyber Risk Assessments (MLCRA): - Completed a year-long campaign of learning with the capstone being Mission Resilience II in support of USSPACECOM. Emphasis and focus were placed on the Command-and-Control capabilities and the cyber risk to the mission sets served by the system. The process identified several cyber risks to mission operations of the system. Results informed the 2023 Weapon System and DCI Cyber Hardening IAPR, USSPACECOM Integrated Priorities, and Strategic Cybersecurity Program 4-Star Level Briefings. Deep Cyber Resiliency Assessments (DCRAs): - Completed six DCRAs for Mission Partners across the DoD including a high priority special request from a Combatant Command (CCMD). Mission partners include Army Materiel Command, NASA, USTRANSCOM, USSTRATCOM, and USINDOPACOM. - DCRA continues to provide mitigation strategies based on mission analytics for DoD and OGA partners to prioritize critical cyber risk to mission elements in policy and priority risks. - DCRA efforts continue to develop tools and assessment capabilities to map and quantify non-kinetic effects to weapon platforms, weapon systems, and critical infrastructure (CCMD) Mission Analytics (CCMA): - Developed a methodology to measure and weigh combatant commands mission interdependencies and how to define risk to mission from kinetic and non-kinetic fires.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606771D8Z / *Cyber Resiliency & Cyber security Policy*	**Project (Number/Name)** 145 / *Cyber Resiliency & Cybersecurity Policy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Defined the scope of the risk to mission effort to steady state and combat operations dependencies and how these dependencies change when moving between these postures. - Established working relationships with nine of 11 Combatant Commands (CCMD) and developed initial risk to mission dependency weightings for 14 of 55 relationship threats with a plan to be at 30 by the end of calendar year 2023. Prioritized this effort by functional to geographic command relationships first and functional to functional command relationships second. - Integrated and tested provisional results into Mission Level Cyber Risk Assessment (MR-II) with complete concurrence with results as valid and relevant. - Provided risk to mission insight to Deep Cyber Resilience Assessments to elevate developed tactical level cyber result to their relevant operational level mission impacts. Cyber Risk Mitigation: - In coordination with the Services, National Security Agency, DoD CIO, Joint Staff, USTRANSCOM, USEUCOM, USINDOPACOM, USCYBERCOM, Air Force Cyber Resiliency Office for Weapons Systems (CROWS), OUSD(I&S), and USSTRATCOM, refined the requirements and desired functionality for the Cyber Risk Mitigation Tool (CRMT). - Based on these requirements, the CRMT team refined visualizations to include dynamic scorecards, tree charts based on National Institute of Standards and Technology (NIST) vulnerability family, visualization of risk against operational and contingency planning (OPLAN/CONPLAN), mission and system decomposition, the interrelationship of systems/vulnerabilities via link diagram, potential mitigations based on available budget, and dynamic Sankey charts showing the relationship of missions, systems, planning, and organizations. - Updated SIPRnet-based version of the CRMT, which focuses on the status of Service Cybersecurity assessments covering priority weapon systems and critical infrastructure, to automatically import data from systems of record. - Successfully advocated to place additional ADVANA dashboards in the JWICs tool to show depth analytics on cyber vulnerabilities and mitigations. - Advocated and provided initial funding to put ADVANA on JWICS to enable the CRMT to provide in depth analytics on cyber vulnerabilities and mitigations while ensuring data security. - SIPRnet version of the tool is projected to be at full operational capability in September 2023 and the JWICS version is projected to be at initial operational capability in December 2023. - CRMT Data Analysis Team developed high impact Cybersecurity Scorecards in support of the Weapon System and Defense Critical Infrastructure (DCI) IAPR. Cybersecurity for Weapon Systems and Defense Critical Infrastructure (DCI): - Developed and coordinated the Strategic Cybersecurity Program Directive Type Memorandum for issuance.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606771D8Z / *Cyber Resiliency & Cyber security Policy*	**Project (Number/Name)** 145 / *Cyber Resiliency & Cybersecurity Policy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Supported multiple OUSD(A&S) Integrated Acquisition Portfolio Reviews with cybersecurity contributions as a factor in determining overall acquisition risk – to include the conduct of an IAPR focused solely on cyber hardening of weapon systems and defense critical infrastructure which was conducted in collaboration with multiple Combatant Commands. - Established Competitive Acquisition Pathfinder aligned with Cybersecurity for a priority DoD mission area. - Developed a Cyber Risk Mitigation Plan (CRMP) in support of identified installation cyber risks. - Supported Cyber Supply Chain Risk Management initiatives across the Department including support to implementation of Section 889/1656 Prohibitions on covered information and communication technologies for programs in acquisition and sustainment. - Began development and establishment of a standardized risk calculus for reporting control systems in relation to critical infrastructure, a control systems and critical infrastructure common lexicon, taxonomy, and ontology and an assessment reporting template of minimum required data for control systems and critical infrastructure. Initiated Planning for Installation Critical Infrastructure (ICI) Cybersecurity Engagement with NATO and supported ICI cybersecurity engagement with Poland. Weapon System Cyber Security - Cybersecurity Supply Chain Risk Management(C-SCRM): -Initiated conduct study of DIB Cybersecurity in Collaboration with DoD CIO. Collaborated with DoD CIO and other DoD Stakeholders in the Development of the initial DoD DIB Cybersecurity Strategy. Initiated planning for Weapon System C-SCRM Pilots. Capability Portfolio Management for Cyber Capabilities: - Conducted follow-on mission analysis to the USD(A&S)-chaired Cyberspace Operations Enterprise Integrated Acquisition Portfolio review (IAPR) meeting on June 28, 2022, which highlighted the need for a dedicated and enduring joint cyberspace operations capabilities System of Systems (SoS) Systems Engineering & Integration (SE&I) lead organization. Developed an Acquisition Decision Memorandum which formalized USSCYBEROMs authorities and responsibilities in this area. - In coordination with USCYBERCOM, developed options for PEO JWCA organization at USCYBERCOM. Cybersecurity Maturity Model Certification (CMMC): - Completed formal review and coordination of the 32 Code of Federal Regulations (CFR) proposed rule text on the Cybersecurity Maturity Model Certification (CMMC) 2.0 program with the DoD Office of General Counsel (OGC) and the Small Business Administration. Submitted the proposed rule to the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget (OMB) in July 2023 to support their mandatory review requirement.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606771D8Z / *Cyber Resiliency & Cyber security Policy*	**Project (Number/Name)** 145 / *Cyber Resiliency & Cybersecurity Policy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Completed and submitted the Initial Regulatory Flexibility Analysis (IRFA), the Regulatory Impact Analysis (RIA) and the Paperwork Reduction Act (PRA) documentation to OMB/OIRA in July 2023 - Developed updates to CMMC Enterprise Mission Assurance Support Service (eMASS) to support the DCMA-developed NIST SP 800-171 scoring algorithm and POA&Ms for CMMC Level 2. Updated the data standard to reflect changes in CMMC 2.0, including change from 5 levels to 3; changes in assessor types; assessment scoring for security requirement objectives; conditional and final assessment certificates; and assessing against the NIST standard instead of the CMMC 1.0 model. Developed CMMC program adoption and effective-ness metrics. Developed a tool to map attack TTPS to CMMC security requirements. - Partnered with OUSD(A&S) to conduct a study related to securing the DIB and provided resources to support a pilot for DIB Cybersecurity Services to support small businesses that is being led by OUSD(A&S) Office of Small Business Programs. Supported a supply chain illumination associated with a supply chain for a key weapons system. The effort focused on identifying manufacturers, direct suppliers, and indirect suppliers to the program. The illumination identified potential fragile nodes within the supply chain that could hamper or halt production of the weapon, including but not limited to foreign exposer, financial and operational health, and raw or refined materials bottlenecks. ***FY 2024 Plans:*** Conduct Cyber Risk Assessments in support of CCMDs: - Combatant Command (CCMD) Mission Analysis: Complete second CCMD assist with analytic approach. - Mission Resilience (MR) Games: Prepare for MR IV with CCMD and complete MR III. - Deep Cyber Resiliency Assessments: Perform multiple DCRAs for Mission Partners across the DoD. Cybersecurity for Weapon Systems and Defense Critical Infrastructure (DCI): - Lead the Department's Strategic Cybersecurity Program (SCP) to continue critical weapon systems and defense critical infrastructure cybersecurity assessments and mitigations. - Develop, update, and refine cybersecurity Policy. - Support cybersecurity reviews of MDAPs where USD(A&S) is the Milestone Decision Authority (MDA). Develop enduring solutions for the Department on future assessments and mitigations. - Conduct SCP Pilots to inform cybersecurity best practices for weapon systems in development using multiple acquisition pathways. - Codify USD(A&S) cybersecurity reviews across programs to inform milestone decision authority determinations - Codify USD(A&S) cybersecurity policy and implementation guides for DoD installations, facilities, and DoD-owned critical infrastructure.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606771D8Z / *Cyber Resiliency & Cyber security Policy*	**Project (Number/Name)** 145 / *Cyber Resiliency & Cybersecurity Policy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Codify USD(A&S) cyber Supply Chain Risk Management policy and implementation guides in coordination with DoD CIO and USD(I&S) for programs and procurement. - Support identification of knowledge, skills, and abilities required of personnel to implement cybersecurity policy, plans, and initiatives to defend DoD's critical infrastructure, installations, and facilities. Cyber Risk Information Management: - Continue refine CRMT Functionality in response to user feedback. Address updating of data not available by automated means, and build out connection to additional APIs as appropriate. - Aggressively engage CRMT user community and drive user employment of the CRMT in support of multiple cyber risk management forums. Capability Portfolio Management for Cyber Capabilities: - Advance and mature capabilities for conducting mission engineering for cyberspace operations. - Manage the portfolio of Joint Cyber Warfighting Architecture (JCWA) components to enable the cyber mission force to efficiently and effectively conduct offensive and defensive cyber missions. Support offensive and defensive architecture development and portfolio management in collaboration with USCYBERCOM. - As PSA OPR for the United Platform (UP), oversee the Air Force's, as DoD EA, capability development via portfolio management and governance. Assess UP's interfaces, dependencies, and linkages with other components of the JCWA to integrate and analyze data from offensive and defensive operations and enable effective and efficient offensive and defensive effects. - As the OUSD(A&S) Cyberspace Operations Enterprise portfolio manager OPR, assess the effectiveness of USCYBERCOM requirements generation, mission engineering, and capability prioritization for cyberspace operations capabilities acquisition. In support of the calendar year 2024 USD(A&S)-chaired Cyberspace Operations Enterprise Integrated Acquisition Portfolio review (IAPR) meeting, conduct mission engineering analysis to identify capability gaps across the priority cyberspace operations mission thread. The results will inform OSD fiscal year 2026 program budget review. Defense Industrial Base (DIB) Cybersecurity: - Partner with the DoD CIO and the DIB sector to analyze and demonstrate promising and cost-effective capabilities and candidate solutions related to supply chain risk management and DIB cybersecurity.			
FY 2025 Plans: Conduct Cyber Risk Assessments in support of CCMDs: - Mission Resilience (MR) Games: Prepare for MR IV with CCMD and complete MR III.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606771D8Z / *Cyber Resiliency & Cyber security Policy*	**Project (Number/Name)** 145 / *Cyber Resiliency & Cybersecurity Policy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Deep Cyber Resiliency Assessments: Perform multiple DCRAs for Mission Partners across the DoD in support Department priorities. Conduct Cyber Risk Assessments of priority DoD Assets (+$10 million in FY 2025). - Combatant Command (CCMD) Mission Analysis: Complete third CCMD assist with analytic approach. Cybersecurity for Weapon Systems and Defense Critical Infrastructure (DCI): - Lead the Department's Strategic Cybersecurity Program (SCP) to continue critical weapon systems and defense critical infrastructure cybersecurity assessments and mitigations. - Develop, update, and refine cybersecurity Policy. - Support cybersecurity reviews of MDAPs where USD(A&S) is the MDA. - Enable USD(A&S) cybersecurity reviews across programs to inform milestone decision authority determinations. - Codify USD(A&S) cybersecurity policy and implementation guides for DoD installations, facilities, and DoD-owned critical infrastructure. - Codify USD(A&S) cyber Supply Chain Risk Management policy and implementation guides in coordination with DoD CIO and USD(I&S) for programs and procurement. - Support identification of knowledge, skills, and abilities required of personnel to implement cybersecurity policy, plans, and initiatives to defend DoD's critical infrastructure, installations, and facilities. Cyber Risk Information Management: - With both classified versions of the CRMT at full operational capability and datasets being loaded automatically via machine-to-machine interface, focus will be placed on adding Service datasets, threat reporting, and other datasets to meet stakeholder needs, as appropriate. - CRMT use will further expand within the Cyber Warfare Directorate to incorporate all section information and expand tool use in wargames and at CCMDs. Develop Cybersecurity Scorecards for Priority DoD Missions Weapon System Cyber Security - Cybersecurity Supply Chain Risk Management(C-SCRM): -Conduct Phase II of Weapon System C-SCRM Pilots (+$15 million in FY 2025). Demonstrate the efficacy of C-SCRM capabilities and continue to develop and refine C-SCRM best practices. Capability Portfolio Management for Cyber Capabilities: - Continue to advance and mature capabilities for conducting mission engineering for cyberspace operations. - Manage the portfolio of Joint Cyber Warfighting Architecture (JCWA) components to enable the cyber mission force to efficiently and effectively conduct offensive and defensive cyber missions. Support offensive and defensive architecture development and portfolio management in collaboration with USCYBERCOM.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606771D8Z / *Cyber Resiliency & Cyber security Policy*	**Project (Number/Name)** 145 / *Cyber Resiliency & Cybersecurity Policy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- As the OUSD(A&S) Cyberspace Operations Enterprise portfolio manager OPR, assess the effectiveness of USCYBERCOM requirements generation, mission engineering, and capability prioritization for cyberspace operations capabilities acquisition. In support of the calendar year 2025 USD(A&S)-chaired Cyberspace Operations Enterprise Integrated Acquisition Portfolio review (IAPR) meeting, conduct mission engineering analysis to identify capability gaps across the priority cyberspace operations mission thread. The results will inform OSD fiscal year 2026 Program Budget Review. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease supports higher departmental priorities.			
Accomplishments/Planned Programs Subtotals	18.524	45.194	40.401

	FY 2023	FY 2024
Congressional Add: Deep Cyber Resiliency Assessments	20.000	-
FY 2023 Accomplishments: - Deep Cyber Resiliency Assessments (DCRAs): Completed four DCRAs for Mission Partners across the DoD including a high priority special request from USINDOPACOM. Matured DCRA methodology and demonstrated the exceptional proficiency of DCRA team. Demonstrated the performance of DCRA Teams Advanced Data Collection Capabilities in a stressing operational environment. - Provided Combatant Command Mission Analytics support to USSPACECOM and USINDOPACOM and demonstrated CCMD proof of concept. - Procured equipment for a new facility in Huntsville, AL and Crystal City, VA to enable the teams to conduct Cyber Risk Assessments in a Top Secret environment. - Established Mission Level Cyber Risk Assessment capability in Crystal City, VA.		
Congressional Adds Subtotals	20.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606771D8Z / *Cyber Resiliency & Cyber security Policy*	Project (Number/Name) 147 / *Securing the Defense Industrial Base (DIB): Cybersecurity Maturity Model Certification (CMMC)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
147: *Securing the Defense Industrial Base (DIB): Cybersecurity Maturity Model Certification (CMMC)*	7.751	11.553	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program has been moved to PE 0305104D8Z / Securing the Defense Industrial Base (DIB): Cybersecurity Maturity Model Certification (CMMC)

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression and Prevail in Conflict, Defend the Homeland, and Build Enduring Advantage

Development, implementation and sustainment of the Cybersecurity Maturity Model Certification (CMMC) framework that incorporates multiple cybersecurity standards and references into a unified standard that encompasses both the progression of cybersecurity practices as well as the maturity of processes to secure Controlled Unclassified Information (CUI) within the Defense Industrial Base (DIB) sector.

Conduct pathfinders to assess the feasibility and efficacy of employing emerging commercial services/tools/platforms that provide insights into cybersecurity threats and vulnerabilities that are relevant to the DIB sector and the DoD supply chain.

Partner with the DIB sector to demonstrate cost-effective and scalable cybersecurity services that augment and/or enhance existing commercial capabilities and services. Focus on cybersecurity services for small-to-medium sized DIB companies that are critical to the DoD supply chain but lack sufficient cybersecurity capabilities to protect CUI.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Securing the Defense Industrial Base (DIB): Cybersecurity Maturity Model Certification (CMMC)	11.553	-	-
Accomplishments/Planned Programs Subtotals	11.553	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606771D8Z / *Cyber Resiliency & Cyber security Policy*	**Project (Number/Name)** 147 / *Securing the Defense Industrial Base (DIB): Cybersecurity Maturity Model Certification (CMMC)*

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606774D8Z / *Defense Civilian Training Corps*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	27.054	-	27.054	29.450	15.044	0.042	0.043	Continuing	Continuing
852: *Defense Civilian Training Corps*	-	0.000	0.000	27.054	-	27.054	29.450	15.044	0.042	0.043	Continuing	Continuing

Note

New Start (Y/N): No. The Defense Civilian Training Corps (DCTC) program was established in FY 2023 and funded under the Department of Defense Acquisition Workforce Development Account (DAWDA). In FY 2025, DCTC was realigned to the Office of Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S)).

A. Mission Description and Budget Item Justification

The Defense Civilian Training Corps (DCTC) program is directed by 10 U.S.C. Ch 113 with the purpose to prepare selected students for public service and meet critical skill gaps in acquisition, digital and critical technologies, science, engineering, finance and other civilian occupations determined by the Secretary of Defense. Chapter 113 requires the Secretary of Defense, acting through the Office of Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S)), to establish units at any accredited civilian educational institution authorized to grant baccalaureate degrees. Using Chapter 113 direction and FY 2023 DCTC appropriated funding initiated as an add by Congress (the PB 2024 request did not include a request for DCTC funding), the OUSD(A&S) initiated in August 2023 a pilot two-year (junior and senior) program preparing future acquisition and sustainment civilians, with four DCTC pilot units deployed at four universities starting with a total of ninety undergraduate scholars (juniors). DCTC includes DoD-context undergraduate classes and DoD real-world challenge projects sponsored by DoD field organizations which also host project-based summer internships with mentoring. DCTC classes cover federal government structure and functions, DoD mission and culture, the acquisition ecosystem and functions, ethics and technical literacy. The DCTC program includes completion of scholar security clearances and use of hiring authorities at graduation for immediate placement in jobs at DoD organizations. DoD intends that the DCTC program design serve as a platform completely available for replication by other federal partners. DCTC will strengthen the DoD talent (supply-side) pipeline with new-hire DoD civilians, prepared for DoD acquisition and sustainment careers, accelerated in development and readiness for public service and contributing day-one to the DoD acquisition and sustainment mission.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606774D8Z / *Defense Civilian Training Corps*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	27.054	-	27.054
Total Adjustments	0.000	0.000	27.054	-	27.054
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustment	-	-	27.054	-	27.054

Change Summary Explanation

Increase from FY 2024 to FY 2025 from $0 to $27 million is due to a strategic decision to not fund the program in FY 2024 while the results and costs of efforts funded by FY 2023 dollars were evaluated. Based on the positive assessment of the initial investment, FY 2025 funding is appropriate.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606774D8Z / *Defense Civilian Training Corps*	Project (Number/Name) 852 / *Defense Civilian Training Corps*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
852: *Defense Civilian Training Corps*	-	0.000	0.000	27.054	-	27.054	29.450	15.044	0.042	0.043	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Defense Civilian Training Corps (DCTC) program is directed by 10 U.S.C. Ch 113 with the purpose to prepare selected students for public service and meet critical skill gaps in acquisition, digital and critical technologies, science, engineering, finance and other civilian occupations determined by the Secretary of Defense. With the requested FY 2025 funding, DoD will continue the two-year DCTC acquisition and sustainment-focused development program at four universities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense Civilian Training Corps	0.000	0.000	27.054
FY 2024 Plans: The DCTC program will continue program pilots at the University of Arizona, North Carolina A&T University, Purdue University, and Virginia Tech University. An existing student tracking system developed by the Department of the Navy will be modified to support DCTC student management. Processes for assessing graduates into Defense Department positions will be developed, tested, and refined. Total students enrolled will increase from 90 to a target of 120.			
FY 2025 Plans: With the requested FY 2025 funding, DoD will continue the two-year (junior and senior) DCTC program at the four universities, one of which is a Historically Black College and University and one a Hispanic Serving Institution. DoD will continuously assess pilot program effectiveness for the current cohort which graduates in May 2025 and two following cohorts, the latter graduating in May 2027. DoD will provide OMB an annual pilot program assessment report and plans to provide Congress a pilot follow-on implementation plan in March 2025.			
FY 2024 to FY 2025 Increase/Decrease Statement: Increase from Fiscal Year 2024 to Fiscal Year 2025 from $0 to $27 million is due to a strategic decision to not fund the program in 2024 while the results and costs of efforts funded by Fiscal Year 2023 dollars were evaluated. Based on the positive assessment of the initial investment, 2025 funding is appropriate.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	27.054

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606774D8Z / *Defense Civilian Training Corps*	**Project (Number/Name)** 852 / *Defense Civilian Training Corps*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

DCTC support is acquired from participating universities through an agreement with a University Affiliated Research and Development Center.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0606775D8Z / *Joint Production Accelerator Cell (JPAC)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	5.010	-	5.010	5.509	6.058	6.668	7.328	Continuing	Continuing
780: *Joint Prod Accelerator Cell*	-	0.000	0.000	5.010	-	5.010	5.509	6.058	6.668	7.328	Continuing	Continuing

Note

New Start (Y/N): Yes

A. Mission Description and Budget Item Justification

This Program Element supports building a resilient Joint Force, robust Defense Ecosystem, and Enduring Advantages by enabling the Joint Production Accelerator Cell (JPAC) to assess and analyze opportunities to enhance the defense industrial base's production capacity, resilience, and surge capability for key weapon systems and supplies.

This Program Element will also support the drive to modernize and strengthen our military and invest in our national power to maintain a competitive edge. The analysis and assessment of flexible and scalable manufacturing approaches will further enable USD(A&S) to advance innovative processes, drive scaled production to meet 21st century Warfighter needs, and improve the responsiveness of the defense industrial base to DoD demand.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	5.010	-	5.010
Total Adjustments	0.000	0.000	5.010	-	5.010
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• New Start	-	-	5.010	-	5.010

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0606775D8Z / *Joint Production Accelerator Cell (JPAC)*	Project (Number/Name) 780 / *Joint Prod Accelerator Cell*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
780: *Joint Prod Accelerator Cell*	-	0.000	0.000	5.010	-	5.010	5.509	6.058	6.668	7.328	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Program Element supports building a resilient Joint Force, robust Defense Ecosystem, and Enduring Advantages by enabling the Joint Production Accelerator Cell (JPAC) to assess and analyze opportunities to enhance the defense industrial base's production capacity, resilience, and surge capability for key weapon systems and supplies.

This Program Element will also support the drive to modernize and strengthen our military and invest in our national power to maintain a competitive edge. The analysis and assessment of flexible and scalable manufacturing approaches will further enable USD(A&S) to advance innovative processes, drive scaled production to meet 21st century Warfighter needs, and improve the responsiveness of the defense industrial base to DoD demand.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Assessments and Analyses on Advanced, Flexible, and Scalable Manufacturing Approaches	0.000	0.000	5.010	0.000	5.010
Description: This effort focuses on identifying opportunities, assessing feasibility, and developing actionable recommendations to inject advanced, flexible, and scalable manufacturing approaches into DoD supply chains. Projects will explore opportunities to integrate digital engineering and advanced manufacturing techniques at scale for major weapon systems. This effort will better enable USD(A&S) to advance the implementation of innovative design processes, drive the adoption of advanced manufacturing techniques, and improve the responsiveness and surge capacity of the defense industrial base to meet DoD demand and Warfighter needs.					
FY 2024 Plans: N/A					
FY 2025 Base Plans: - Initiate research efforts to assess opportunities to inject advanced, flexible, and scalable design and manufacturing techniques into DoD supply chains - Evaluate previous and ongoing industry and Government efforts to identify, develop, inject, and scale advanced design and manufacturing approaches - Assess opportunities to develop and scale alternate manufacturing techniques for critical munitions sub-components including, but not limited to, ball bearings, artillery shell casings, and solid rocket motors					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0606775D8Z / *Joint Production Acceler ator Cell (JPAC)*	**Project (Number/Name)** 780 / *Joint Prod Accelerator Cell*	

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Analyze opportunities and approaches to modernize production facilities to enable flexible and agile manufacturing, including digital engineering, advanced reductive manufacturing, additive manufacturing, and flexible/agile tooling. Assessments will seek to define tangible benefits to production and surge capacity, as well as associated costs and implementation timelines. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** PE 0606775D8Z increase to $5.010 million will enable the injection of advanced, flexible, and scalable manufacturing approaches into DoD supply chains. It will enable enduring industrial production capacity, resilience, and surge capability for key defense weapon systems and supplies.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	5.010	0.000	5.010

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0203345D8Z / *Defense Operations Security Initiative (DOSI)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	2.832	2.933	3.112	3.151	-	3.151	3.168	3.230	3.295	3.360	Continuing	Continuing
345: *Defense Operations Security Initiative*	2.832	2.933	3.112	3.151	-	3.151	3.168	3.230	3.295	3.360	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 003

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the National Strategy and Department's priorities to Deter Aggression, Defend the Homeland, Prevail in Conflict, and Build Sustainable and Long-Term Advantage. This program also supports DoD Data Strategy, specifically enabling next-generation approaches to protect data as it is a strategic asset.

The Defense Operations Security Initiative (DOSI) establishes and leads the Department's next-generation Operations Security (OPSEC) capability development and affiliated investment strategy. Investments support DoD's current and emerging OPSEC capability gaps, including countering advances in non-U.S. Intelligence, Surveillance, and Reconnaissance (ISR) capabilities and denying the understanding of U.S. capability, capacity, readiness, and critical technology and information from adversaries. These investments spur Department innovation and preserve U.S. technology superiority. DOSI analysis and engineering lead the community's ability to sustain and maximize technology advantage as they are transitioned to Service and Agency programs for sustainment, maintenance, and capacity programming. Test and evaluation analyses establish measure and countermeasure effectiveness in current and emerging operational environments.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	3.034	3.112	3.177	-	3.177
Current President's Budget	2.933	3.112	3.151	-	3.151
Total Adjustments	-0.101	0.000	-0.026	-	-0.026
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.101	-			
• Departmental Adjustment	-	-	-0.026	-	-0.026

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0203345D8Z / *Defense Operations Security Initiative (DOSI)*

Change Summary Explanation

No significant change from FY 2024 to FY 2025.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0203345D8Z / *Defense Operations Security Initiative (DOSI)*	Project (Number/Name) 345 / *Defense Operations Security Initiative*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
345: *Defense Operations Security Initiative*	2.832	2.933	3.112	3.151	-	3.151	3.168	3.230	3.295	3.360	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 003

A. Mission Description and Budget Item Justification

DOSI establishes and leads the Department's next-generation Operations Security (OPSEC) capability development and affiliated investment strategy. Investments support DoD's current and emerging OPSEC capability gaps, including countering advances in non-U.S. Intelligence, Surveillance, and Reconnaissance (ISR) capabilities and denying the understanding of U.S. capability, capacity, readiness, and critical technology and information from adversaries. These investments spur Department innovation and preserve U.S. technology superiority. DOSI analyses and engineering activities lead the community's ability to sustain and maximize technology advantages as they are transitioned to Service and Agency programs for sustainment, maintenance, and capacity programming. Results of tests and evaluations enable the community to identify OPSEC measure and countermeasure effectiveness in current and emerging operational environments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense Operations Security Initiative	2.933	3.112	3.151
Description: RDT&E investments focused on countering advances in non-U.S. ISR capabilities and denying adversaries' understanding of U.S. capability, capacity, readiness, and critical technology and information. These investments spurred Department innovation toward preserving U.S. information and technology superiority. DOSI's analyses and engineering activities enabled the OPSEC community's ability to sustain and maximize technological advantages.			
FY 2024 Plans: - Continue to oversee research, development, and testing on next-generation capabilities that counter foreign ISR capabilities and deny adversaries' understanding of U.S. critical information (including: capability, capacity, and readiness). - Continue to provide oversight and advocacy for transitioning developed capabilities into formalized program offices and program executive offices across DoD Components. - Continue participating in Defense RDT&E processes to advance basic and applied research, science and technology, and technology development and testing to elevate OPSEC capability and capacity across the Department.			
FY 2025 Plans: - Continue to oversee research, development, and testing on next-generation capabilities that counter foreign ISR capabilities and deny adversaries' understanding of U.S. capability, capacity, and readiness. - Continue to provide oversight and advocacy for transitioning developed capabilities into formalized program offices and program executive offices across DoD Components.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0203345D8Z / *Defense Operations Security Initiative (DOSI)*	**Project (Number/Name)** 345 / *Defense Operations Security Initiative*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue participating in Defense RDT&E processes to advance basic and applied research, science and technology, and technology development and testing to elevate OPSEC capability and capacity across the Department. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No significant change from FY 2024 to FY 2025.			
Accomplishments/Planned Programs Subtotals	2.933	3.112	3.151

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The acquisition, management, and contracting strategy involves the following:

• Adhere to guidance outlined in DoD 5000, Directive 7, Federal Acquisition Regulations (FAR), and FAR Supplement Policies and Procedures.

• RDT&E OPSEC capabilities, systems, tools, products, and services are delivered through a disciplined yet agile process that ensures signature management and signature obfuscation capabilities are available for DoD components.

• Sustain an acquisition process that is responsive and responsible to internal and external customers and stakeholders.

• Continue to support the warfighter's need for capabilities that dominate today's dynamic, networked battlespace by providing strategy across the DoD for the planning and execution of OPSEC.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	-	-	12.424	-	12.424	12.598	12.778	12.962	13.149	Continuing	Continuing
171: *5G Cross Functional Team*	0.000	-	-	12.424	-	12.424	12.598	12.778	12.962	13.149	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Fifth Generation (5G) Cross Functional Team's (CFT) mission is to accelerate the 5G wireless networking technologies adoption across the DoD enterprise. The CFT is responsible for DoD's 5G wireless technology policy, guidance, research, and acquisition. The CFT will leverage innovative efforts across the telecommunications space by strengthening DoD's external relationships and ensuring interoperability with industry, interagency, and international partners.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	12.424	-	12.424
Total Adjustments	0.000	0.000	12.424	-	12.424
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	12.424	-	12.424

Change Summary Explanation

Starting in FY 2025, $12.524 million realigned to the DoD Chief Information Officer (CIO) and BA 07 from Under Secretary of Defense (Research & Engineering) (USD(R&E)) and BA 04.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	Project (Number/Name) 171 / *5G Cross Functional Team*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
171: *5G Cross Functional Team*	0.000	-	-	12.424	-	12.424	12.598	12.778	12.962	13.149	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Same as program level mission description.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: 5G Cross Functional Team (CFT) Support	-	-	12.424
Description: Fifth generation (5G) wireless networking is a suite of transformational communications technologies that are key enablers for U.S. defense modernization, and fundamental to all aspects of modem warfare. U.S. primacy in the great power competition rests on its ability to lead and sustain the competitive advantage in communications networks, standards, and platform technologies that underpin our global systems of exchange - our strategic center of gravity. Increasingly capable peer adversaries threaten U.S. strategic, tactical, and commercial networks that share a common communications technology base. To ensure DoD can operate effectively anywhere and anytime, including in congested and contested spectrum and on compromised networks, DoD is accelerating adoption of 5G and next generation wireless networking technologies. DoD must advance and master 5G technologies to enable U.S. military superiority and ensure U.S. national security, homeland security, and economic security. ***FY 2025 Plans:*** • Support military departments' transition plan development and provide guidance on incorporating 5G capabilities into existing programs of record to meet requirements and operational needs. • Leverage commercial technologies that can solve tactical problems, supporting the warfighter. • Advise DoD on policy, acquisition, sustainment, and resourcing to establish,#sustain, and transition 5G capabilities to operational use, maintaining# U.S. military superiority. • Advance and support DoD's commercial and public-private initiatives. • Facilitate cross-coordination, tracking, and collaborating on DoD, interagency, and international 5G efforts; fully implement the 5G Standards Strategy; and actively participate, through proxy representation, in the Third Generation Partnership Project (3GPP) organization, as well as the Alliance for Telecommunications Industry Solutions (ATIS). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Starting in FY 2025, $12.524 million realigned to the DoD Chief Information Officer (CIO) and BA 07 from the Under Secretary of Defense (Research & Engineering) (USD(R&E)) and BA 04.			
Accomplishments/Planned Programs Subtotals	-	-	12.424

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 171 / *5G Cross Functional Team*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	Project (Number/Name) 171 / *5G Cross Functional Team*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
5G Cross Functional Team (CFT) Support	MIPR	TBD : TBD	-	-		0.000	Mar 2024	12.424	Mar 2025	-		12.424	Continuing	Continuing	-
		Subtotal	-	-		0.000		12.424		-		12.424	Continuing	Continuing	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.000		12.424		-		12.424	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 171 / *5G Cross Functional Team*

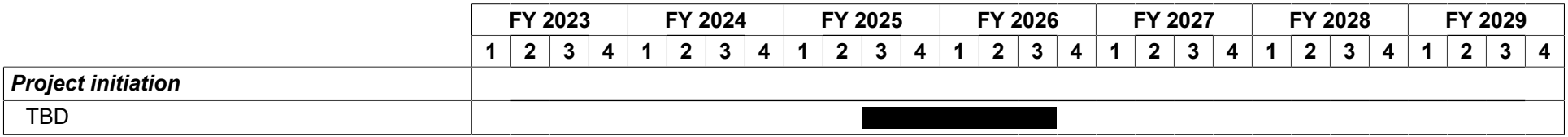

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0604011D8Z / *Next Generation Information Communications Technology (5G)*	**Project (Number/Name)** 171 / *5G Cross Functional Team*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Project initiation				
TBD	3	2025	3	2026

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607162D8Z / *ChemBio Weapons Elimination Technology Improvement*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	4.254	0.000	4.254	2.367	3.100	3.007	2.180	Continuing	Continuing
548: *ChemBio Weapons Elim Tech Impr*	-	-	0.000	4.254	-	4.254	2.367	3.100	3.007	2.180	Continuing	Continuing

Note

New Start (Y/N): Yes - The FY 2025 funding for ChemBio Weapons Elimination Technology Improvement is a realignment of funding from the Chemical Agents & Munitions Destruction, Defense (CAMD,D) appropriation account to the Office of the Under Secretary of Defense for Acquisition & Sustainment (OUSD(A&S)) in order to maintain enduring chemical warfare material assessment and destruction capabilities once the destruction of the U.S. chemical stockpile, through the Assembled Chemical Weapons Alternatives (ACWA) program mission, was completed. The funding also aligns National Defense Strategy priorities and ensures an enduring capability to destroy chemical and biological weapons – domestic and foreign.

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to build a resilient Joint Force and to maintain a complete and enduring capability to assess and destroy chemical and biological weapons, regardless of location or operational environment, in accordance with U.S. treaty obligations and support of priorities and tasks laid out in DoD strategic guidance and by the Executive Agent for U.S. Recovered Chemical Warfare Material.

The Chemical and Biological Weapons Elimination (CBWE) research and development activities (RDAs) ensure DoD's capabilities to assess and destroy U.S. recovered chemical warfare material and to deter aggression, build a resilient Joint Force, and mitigate existing and emerging global chemical and biological threats. CBWE RDAs enables the assessment, disablement, and destruction of CBW by advancing materiel readiness.

RDAs provide chemical and biological weapons (CBW) elimination capabilities and materiel solutions. The CBWE portfolio enables DoD to prevent adversary acquisition, transfer, deployment, and use of CBW. Likewise, the portfolio's investments advance materiel readiness and enhance DoD's capabilities to assess, disable or destroy CBW ensuring the Department has "credible options to eliminate critical capabilities and programs [to] further demonstrate the undesirable costs an actor will face should it use WMD." (2023 DoD Strategy to Counter Weapons of Mass Destruction).

The CBWE portfolio will execute along several lines of effort (LOEs) designed to ensure assessment and destruction of U.S. recovered chemical warfare material as well as prepare the Joint Force for a Future Operating Environment in which adversary possession for WMDs pose threats ranging of existential to tactical, and limit U.S. strategic choices. These LOEs will create options across the continuum of conflict, including materiel solutions for small-scale and bulk CBW agents, and solutions for the elimination of nation state CBW programs and stockpiles.

The Office of the Secretary of Defense uses the CBWE Portfolio to invest strategically in projects to fill validated requests from the Services, combat support agencies, defense agencies, and the U.S. Recovered Chemical Warfare Material Executive Agent (RCWM EA). Funding is prioritized for projects that close U.S. RCWM EA and Joint Force warfighter capability gaps. An annual investment strategy is used to meet capability needs.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607162D8Z *I ChemBio Weapons Elimination Technology Improvement*

The CBWE Technology Improvement program invests in upgrades and enhancements to fielded systems used to assess, disable, and/or destroy chemical and biological weapons and material. Funds are used for integration of operational prototypes into fielded systems, or other upgrades and enhancements, including any necessary test and evaluation. Investments modernize existing capabilities within the Department of Defense to enhance the RCWM EA's and Joint Force's capabilities by upgrading and enhancing currently fielded systems.

This program funds labor, materials, and travel requirements, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	4.254	0.000	4.254
Total Adjustments	0.000	0.000	4.254	-	4.254
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Realignment from CAMD,D	-	-	4.254	-	4.254

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 548: *ChemBio Weapons Elim Tech Impr*		
Congressional Add: *P*548 / ChemBio Weapons Elimination Technology Improvement*	0.000	0.000
Congressional Add Subtotals for Project: 548	0.000	0.000
Congressional Add Totals for all Projects	0.000	0.000

Change Summary Explanation

The FY 2025 funding for ChemBio Weapons Elimination Tech Improvement is a realignment of funding from the Chemical Agents & Munitions Destruction, Defense (CAMD,D) appropriation account to the Office of the Under Secretary of Defense for Acquisition & Sustainment (OUSD(A&S)) in order to maintain enduring chemical warfare material assessment and destruction capabilities once the destruction of the U.S. chemical stockpile, through the Assembled Chemical

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607162D8Z *I ChemBio Weapons Elimination Technology Improvement*

Weapons Alternatives (ACWA) program mission, was completed. The funding also aligns National Defense Strategy priorities and ensures an enduring capability to destroy chemical and biological weapons – domestic and foreign.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607162D8Z / *ChemBio Weapons Elimination Technology Improvement*	Project (Number/Name) 548 / *ChemBio Weapons Elim Tech Impr*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
548: *ChemBio Weapons Elim Tech Impr*	-	-	0.000	4.254	-	4.254	2.367	3.100	3.007	2.180	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): Yes - The FY 2025 funding for ChemBio Weapons Elimination Technology Improvement is a realignment of funding from the Chemical Agents & Munitions Destruction, Defense (CAMD,D) appropriation account to the Office of the Under Secretary of Defense for Acquisition & Sustainment (OUSD(A&S)) in order to maintain enduring chemical warfare material assessment and destruction capabilities once the destruction of the U.S. chemical stockpile, through the Assembled Chemical Weapons Alternatives (ACWA) program mission, was completed. The funding also aligns National Defense Strategy priorities and ensures an enduring capability to destroy chemical and biological weapons – domestic and foreign.

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to build a resilient Joint Force and to maintain a complete and enduring capability to assess and destroy chemical and biological weapons, regardless of location or operational environment, in accordance with U.S. treaty obligations and support of priorities and tasks laid out in DoD strategic guidance and by the Executive Agent for U.S. Recovered Chemical Warfare Material.

The Chemical and Biological Weapons Elimination (CBWE) research and development activities (RDAs) ensure DoD's capabilities to assess and destroy U.S. recovered chemical warfare material and to deter aggression, build a resilient Joint Force, and mitigate existing and emerging global chemical and biological threats. CBWE RDAs enables the assessment, disablement, and destruction of CBW by advancing materiel readiness.

RDAs provide chemical and biological weapons (CBW) elimination capabilities and materiel solutions. The CBWE portfolio enables DoD to prevent adversary acquisition, transfer, deployment, and use of CBW. Likewise, the portfolio's investments advance materiel readiness and enhance DoD's capabilities to assess, disable or destroy CBW ensuring the Department has "credible options to eliminate critical capabilities and programs [to] further demonstrate the undesirable costs an actor will face should it use WMD." (2023 DoD Strategy to Counter Weapons of Mass Destruction).

The CBWE portfolio will execute along several lines of effort (LOEs) designed to ensure assessment and destruction of U.S. recovered chemical warfare material as well as prepare the Joint Force for a Future Operating Environment in which adversary possession for WMDs pose threats ranging of existential to tactical, and limit U.S. strategic choices. These LOEs will create options across the continuum of conflict, including materiel solutions for small-scale and bulk CBW agents, and solutions for the elimination of nation state CBW programs and stockpiles.

The Office of the Secretary of Defense uses the CBWE Portfolio to invest strategically in projects to fill validated requests from the Services, combat support agencies, defense agencies, and the U.S. Recovered Chemical Warfare Material Executive Agent (RCWM EA). Funding is prioritized for projects that close U.S. RCWM EA and Joint Force warfighter capability gaps. An annual investment strategy is used to meet capability needs.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607162D8Z / *ChemBio Weapons Elimination Technology Improvement*	**Project (Number/Name)** 548 / *ChemBio Weapons Elim Tech Impr*

The CBWE Technology Improvement program invests in upgrades and enhancements to fielded systems used to assess, disable, and/or destroy chemical and biological weapons and material. Funds are used for integration of operational prototypes into fielded systems, or other upgrades and enhancements, including any necessary test and evaluation. Investments modernize existing capabilities within the Department of Defense to enhance the RCWM EA's and Joint Force's capabilities by upgrading and enhancing currently fielded systems.

This program funds labor, materials, and travel requirements, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: P*548 / ChemBio Weapons Elimination Technology Improvement	-	-	4.254
Description: The CBWE program invests in materiel solutions through the improvement of technologies; developmental and operational test and evaluation; and transition to fielded capabilities that counter WMD proliferation. This program enables the transition of technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry. ***FY 2025 Plans:*** • Advanced development of large item chemical weapons destruction capabilities and development of monitoring and assessment technologies in support of U.S. RCWM EA requirements. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2025 funding for ChemBio Weapons Elimination Tech Improvement is a realignment of funding from the Chemical Agents & Munitions Destruction, Defense (CAMD,D) appropriation account to the Office of the Under Secretary of Defense for Acquisition & Sustainment (OUSD(A&S)) in order to maintain enduring chemical warfare material assessment and destruction capabilities once the destruction of the U.S. chemical stockpile, through the Assembled Chemical Weapons Alternatives (ACWA) program mission, was completed. The funding also aligns National Defense Strategy priorities and ensures an enduring capability to destroy chemical and biological weapons – domestic and foreign.			
Accomplishments/Planned Programs Subtotals	-	-	4.254

	FY 2023	FY 2024
Congressional Add: P*548 / ChemBio Weapons Elimination Technology Improvement	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607162D8Z / *ChemBio Weapons Elimination Technology Improvement*	**Project (Number/Name)** 548 / *ChemBio Weapons Elim Tech Impr*

	FY 2023	FY 2024
FY 2023 Accomplishments: No funds. New Start in FY 2025. ***FY 2024 Plans:*** No funds. New Start in FY 2025.		
Congressional Adds Subtotals	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

No funds in FY 2023 and FY 2024. New Start in FY 2025.

D. Acquisition Strategy

The Office of the Deputy Assistant Secretary of Defense for Threat Reduction and Arms Control (ODASD(TRAC)) establishes annual priorities based on national and the DoD strategies and senior leader guidance. Based on those priorities, TRAC solicits project proposals from the RCWM EA, Combatant Commands, Military Services, Defense Agencies, and interagency partners. To be selected, a proposed project must have a validated requirement, an engaged requirement champion, a viable acquisition strategy, and a qualified program management office. A technology project must identify its starting and desired end-state Technology Readiness Level. Likewise, the end-user for any proposed project must demonstrate a long-term plan for acceptance and sustainment of a fieldable capability. Project period of performance is typically 12-36 months.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607162D8Z / *ChemBio Weapons Elimination Technology Improvement*	Project (Number/Name) 548 / *ChemBio Weapons Elim Tech Impr*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced development and testing of large item chemical weapons destruction capability technology	C/TBD	DEVCOM CBC : TBD	-	-		-		4.254	Jan 2025	-		4.254	Continuing	Continuing	N/A
		Subtotal	-	-		-		4.254		-		4.254	Continuing	Continuing	N/A

Remarks

Continuation of product development previously funded out of the CAMD,D appropriation.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		4.254		-		4.254	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607162D8Z / *ChemBio Weapons Elimination Technology Improvement*	**Project (Number/Name)** 548 / *ChemBio Weapons Elim Tech Impr*

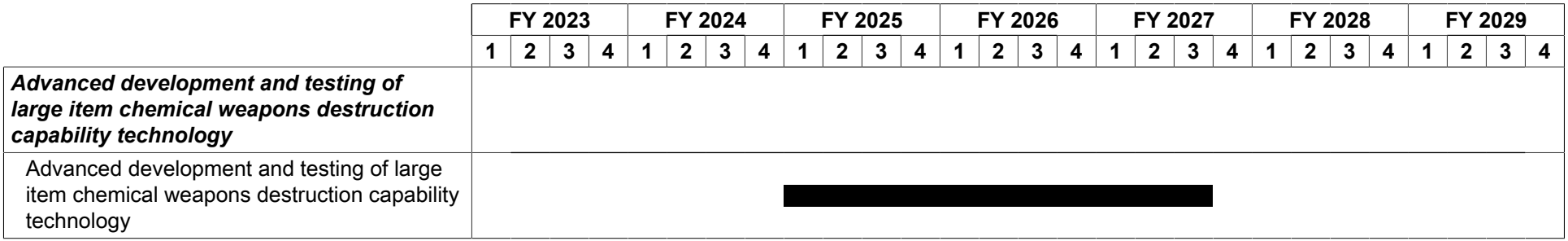

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607162D8Z / *ChemBio Weapons Elimination Technology Improvement*	**Project (Number/Name)** 548 / *ChemBio Weapons Elim Tech Impr*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Advanced development and testing of large item chemical weapons destruction capability technology				
Advanced development and testing of large item chemical weapons destruction capability technology	1	2025	3	2027

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	728.902	802.936	1,017.141	1,099.243	-	1,099.243	960.543	729.864	667.319	679.927	Continuing	Continuing
819: *Industrial Base Analysis and Sustainment*	728.902	802.936	1,017.141	1,099.243	-	1,099.243	960.543	729.864	667.319	679.927	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The IBAS program element line is one component of a broader DoD investment strategy to build and strengthen the defense industrial base and secure U.S. supply chains. Residing within the Manufacturing, Capability Expansion and Investment Prioritization (MCEIP) Directorate, within the Office of the Assistant Secretary of Defense for Industrial Base Policy (OASD(IBP)), IBAS investments are used discretely and in combination with other DoD investment programs, such as MCEIP office Defense Production Act (DPA) Title III, to ensure collaborative and non-duplicative investment against critical defense industrial base and U.S. supply chain issues. The IBAS program element supports MCEIP office priorities through investment in prime and sub-tier suppliers to mitigate supply chain risks and eliminate production capacity bottlenecks, which align to EO 14017 and National Defense Industrial Strategy directives. IBAS program element investments are further synchronized across the department through coordination with other research and development programs, including but not limited to the Defense-Wide Manufacturing Science and Technology Program, residing in the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)).

Industrial Base Analysis and Sustainment (IBAS) Support was established in accordance with 10 USC Sec 4817 Industrial Base Fund. The ability of the United States to maintain readiness, and to surge and sustain in response to an emergency, directly relates to the capacity, capabilities, and resiliency of our manufacturing and defense industrial base and supply chains. IBAS authorities and flexibility are key components to build the industrial capabilities needed to innovate, produce, and sustain the weapon systems for today and tomorrow.

The IBAS Program element provides the Department with a unique capability to achieve the strategic aims of the 2022 National Defense Strategy, which calls for a strong, resilient, responsive and healthy U.S. Industrial Base (IB) that underpins current and future U.S. force readiness. This program element is uniquely positioned to improve the U.S. Industrial Base's competitiveness and ability to respond to the Department's needs by applying focused investments to 1) monitor and assess the current state of the IB, 2) address critical issues in the IB relating to urgent operational needs, 3) address supply chain vulnerabilities, and 4) support efforts to expand the Industrial Base.

Global supply chain disruptions have become more common, with recent events highlighting risks and vulnerabilities that undermine our national security. The February 24, 2022 report on Executive Order (E.O.) 14017, "America's Supply Chains", and the 2022 Industrial Base Capabilities (ICR) report, each outline strategic focus areas and enabling capabilities, their associated vulnerabilities, and provide recommendations to strengthen the defense industrial base.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*

Management Process – To successfully execute the FY 2025 budget, the IBAS Program Office within the Office of the Assistant Secretary of Defense for Industrial Base Policy (OASD(IBP)) will oversee the health of the IBAS portfolio and project codes. The IBAS Program Office coordinates with a Military Department or defense agency technical lead to develop and execute an acquisition strategy and implementation plans for each strategic focus area.

FY 2025 strategic focus areas that will be executed in IBAS Project Code P819 include workforce, critical minerals, castings and forgings, kinetic weapons, energy storage and batteries and microelectronics. Descriptions of each focus area are included in the P819 R-2a.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	830.294	1,017.141	1,149.175	-	1,149.175
Current President's Budget	802.936	1,017.141	1,099.243	-	1,099.243
Total Adjustments	-27.358	0.000	-49.932	-	-49.932
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-27.275	-			
• Program Adjustments	-0.083	-	-1.100	-	-1.100
• Defense-Wide Topline Adjustment	-	-	-49.332	-	-49.332
• Additional RDT&E funding	-	-	0.500	-	0.500

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 819: *Industrial Base Analysis and Sustainment*		
Congressional Add: *Advanced Nanomaterials Manufacturing / Metal-organic frameworks*	5.000	-
Congressional Add: *Automated textile manufacturing*	7.500	-
Congressional Add: *Interdisciplinary Center for Advanced Manufacturing Systems*	10.000	-
Congressional Add: *Precision Optics Manufacturing*	10.000	-
Congressional Add: *Accelerated training in defense manufacturing*	5.000	-
Congressional Add: *Advanced Headborne Systems Manufacturing*	5.000	-
Congressional Add: *Carbon/Carbon Industrial Base Enhancement*	3.000	-
Congressional Add: *Career and Technical Education Pilot*	10.000	-
Congressional Add: *Digital Thread Manufacturing Demonstration*	8.000	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Resilient Manufacturing Ecosystem*	5.000	-
Congressional Add: *Ruggedized Transceivers*	7.500	-
Congressional Add: *Advanced Design and Engineering Capabilities for Small Businesses*	12.000	-
Congressional Add: *Advanced Electrochromic Manufacturing Program*	5.000	-
Congressional Add: *Advanced Thermoplastics Demonstration*	4.000	-
Congressional Add: *Aluminum Armor Plating*	1.500	-
Congressional Add: *Automated Integrated Metrology*	5.000	-
Congressional Add: *Demonstration Scale of REE from Coal Ash Technology*	30.000	-
Congressional Add: *Digital Design and Engineering Demonstration*	5.500	-
Congressional Add: *Expanding U.S. Defense Workforce*	20.000	-
Congressional Add: *Hybrid Manufacturing for Lightweight Defense Components*	5.000	-
Congressional Add: *Munitions Supply Chain Diversification*	20.000	-
Congressional Add: *On-Shore Advanced Microelectronic Packaging for Strategic Mission Enablement*	40.000	-
Congressional Add: *On-Shoring Navy Battery Cells*	10.000	-
Congressional Add: *Partnerships For Manufacturing Training Innovation*	7.000	-
Congressional Add: *Systems Engineering Technology (SET) Apprenticeship and Internship Program*	1.200	-
Congressional Add Subtotals for Project: 819	242.200	-
Congressional Add Totals for all Projects	242.200	-

Change Summary Explanation

FY 2025 decrease of $1.100 million is for an internal program adjustment and the decrease of $49.332 million is a defense-wide topline reduction.

FY 2025 increase from FY 2024 provides funding for efforts for Workforce, Critical Minerals, Castings and Forgings, Kinetics Capabilities (Hypersonics) and Microelectronics as follows:

Workforce: In collaboration with the Innovation Capability and Modernization (ICAM) Office and leveraging IBAS program funding, the Navy submarine industrial base task force plans to build on successes from other regional training systems (RTS) and start work in FY 2025 to establish a new RTS. This is an extension of ongoing joint OSD-Navy industrial workforce investments tied directly to efforts supporting the COLUMBIA and VIRGINIA class submarine programs.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*

Critical Minerals: New starts in FY 2025 will focus on development of the midstream supply chain by focusing investment in the metallization & magnets space--the critical step in developing domestic mine-to-magnet capability and transferring some of China's ~90% magnet market dominance to the U.S. As a domestic supply of rare earth element oxides and metals become available, develop resources and processes for validation and testing for defense applications.

Kinetic Capabilities (Hypersonics): Additional funding in FY 2025 to productionize affordability projects and to transition the projects into U.S. Navy and U.S. Army programs of record.

Microelectronics: Additional funding in FY 2025 chiefly to transition from planning to contract execution phase in digital engineering effort.

Castings and Forgings: Increase infrastructure investments to implement automation and improve efficiencies; expand relevant workforce training network; expand relevant materials production efforts to mitigate/eliminate foreign dependencies.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	Project (Number/Name) 819 / *Industrial Base Analysis and Sustainment*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
819: *Industrial Base Analysis and Sustainment*	728.902	802.936	1,017.141	1,099.243	-	1,099.243	960.543	729.864	667.319	679.927	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Global supply chain disruptions have become more common, with recent events highlighting risks and vulnerabilities that undermine our national security. The February 24, 2022 report on Executive Order (E.O.) 14017, “America’s Supply Chains”, and the 2022 Industrial Capabilities Report (ICR) report each outline strategic focus areas and enabling capabilities, their associated vulnerabilities, and provide recommendations to strengthen the defense industrial base.

The FY 2025 IBAS budget reflects the DoD’s commitment to ensuring our supply chains can provide our warfighters with decisive advantage. This budget includes investments to respond to E.O. 14017 and ICR findings and recommendations, emerging and modernization priorities and technologies, and other defense requirements. This is the result of significant coordination for each strategic focus area via the program review teams (PRTs). These PRTs developed an integrated and prioritized investment strategy to address the most pressing needs for each focus area, to include mapping to investment authorities. The FY 2025 IBAS budget reflects the outcome of the PRT recommendations and has been coordinated to complement adjacent investments of related programs including the Defense Production Act (DPA) Title III, Manufacturing Technology (ManTech) program, and at the Military Service level. Accordingly, investments in the following strategic focus areas will establish, sustain, and expand domestic capabilities and capacities to build more sustainable and resilient supply chains.

Workforce – the DoD relies on a skilled workforce to innovate, produce, and sustain our weapon systems. Decades of erosion across workforce development pipelines jeopardize and threaten our industrial base’s ability to remain competitive. Efforts will continue to focus on recruitment, training, placing and retaining skilled workers in support of defense priority states/regions; and coordinating with other interagency programs and leveraging authorities from the Departments of Labor and Education to support priority defense programs. FY 2025's primary effort will be a continuation of a major, multi-year, joint OSD-Navy endeavor begun in FY 2023 focused on ensuring the health and capacity of the DoD’s submarine industrial workforce.

Critical Minerals -critical minerals are used in a broad range of DoD weapon systems. Like other industrial sectors such as microelectronics, there is a critical materials market concentration in China which makes U.S. economic and national security vulnerable to disruption. To mitigate risks, the DoD will pursue four lines of effort: 1) Develop and foster new sustainability standards for strategic and critical material intensive industries; 2) Expand sustainable domestic production, and processing, metallization, and magnetization capacity, including non-traditional mining and recycling; 3) Strengthen U.S. stockpiles and 4) Work with allies and partner nations to promote the sharing of technology, capability, and resources. FY 2025 primary efforts will include new starts on metallization & magnetization capabilities and continue prior year initiatives related to scaling domestic processing of Heavy Rare Earth Elements (HREE) and Light Rare Earth Elements (LREE).

Kinetic Weapons – kinetic capabilities, including hypersonic weapons, are essential to deterring America’s adversaries, who continue their military buildups including their own hypersonics capabilities. Current supply chains are vulnerable to raw materials and chemicals shortages; fragile, foreign, and/or sole-source suppliers; and technical challenges of transitioning hypersonic capabilities into production. The DoD will launch efforts to: 1) Address supply chain vulnerabilities of the most critical

chemicals; 2) Update material specifications, including production and quality testing requirements; and 3) Foster sub-tier suppliers and competition in the hypersonic industrial base to enable affordable production. FY 2025 primary focus efforts will improve and expand the hypersonics industrial base.

Energy Storage and Batteries – due to the small DoD market share and customized battery requirements the DoD is unable to fully leverage the large commercial investment in state-of-the-art energy storage technology. The nearly 100% foreign battery supply chain limits the DoD's ability to field battery enabled weapons/platforms free of adversary supply chain control. To mitigate these risks, DoD is investing to develop domestic assured access to batteries through three focus areas: 1) Initiate studies to define the aggregate demand for energy storage and batteries across the DoD; 2) Pivot to commercial standards and batteries to the maximum extent possible; and 3) Establish internal DoD safety testing capacity for energy storage and batteries for future weapons systems. FY 2025 primary efforts will initiate deep dive DoD demand analysis and identify commercial sourcing synergies.

Castings and Forgings (C&F) – machine tools and cast and forged parts are critical to the development, procurement, and sustainment of all major defense systems. Cast and forged parts are found in 20 percent of the products representing the U.S. Gross Domestic Product. Continuous industry consolidation and offshoring since the 1960's have hollowed out domestic capability, reducing or eliminating competition and increasing our dependence on other nations, including China. To mitigate these risks, the DoD will: Invest in four strategic lines of effort: 1) Metalworking research and Infrastructure supporting production and research in the Organic and commercial industrial base; 2) Workforce Development to improve the C&F workforce's size, capacity, and skills; 3) Upstream Supply Chain Security to provide timely , assured access to reliable sources of supply for the raw, refined, and semi-fabricated metals, materials, and related capabilities required to produce C&F and alternative parts for DoD; and 4) Strategy Refinement, informed by tools and analyses that enable DoD decision makers to sense evolving conditions and adjust efforts as needed.

Microelectronics -components are the foundation of a modern economy and military systems. Various vulnerabilities such as lack of domestic advanced manufacturing capabilities diminished capacity threaten the DoD's ability to source microelectronics needed to sustain programs of record. To prepare the Department for increased global economic and strategic challenges, the DoD must take action to ensure access to the microelectronic components needed to sustain our defense programs and systems effectively and affordably. The Department also needs a better strategy to transition leading edge technology developed by both government and industry to DoD programs of record, to ensure the Department maintains a competitive edge. To respond to the threat and establish a secure and assured domestic supply chain, the DoD will pursue multiple lines of microelectronics efforts. Efforts in IBAS are 1) Expanding the number of qualified domestic lower-tier suppliers providing leading edge microelectronics and packaging technologies; 2) Onshoring a trusted, pure-play, and open-access advanced packaging ecosystem for low-volume/high-mix advanced packaging; 3) Establishing a data repository to manage obsolescence; 4) Bolstering the domestic printed circuit board defense industrial base; and 5) Developing digital engineering methodologies to modernize the way that the DoD specifies and acquires microelectronics.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Industrial Base Analysis and Sustainment (IBAS) Support	560.736	1,017.141	1,099.243
Description: IBAS currently focuses efforts and investments for all fiscal years in the categories listed above and below, continuing investments to mitigate supply chain risks and findings from Executive Order 14017, and on-going assessments for both traditional defense sectors and cross-cutting sectors. Investments in Workforce, Critical Minerals, Castings and Forgings, Kinetics Capabilities, Energy Storage and Batteries, Microelectronics.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025

FY 2024 Plans:

1. Workforce

Industrial Skills Development and Acceleration (National Imperative for Industrial Skills (NIIS) initiative): Roughly 40 NIIS portfolio pilot projects (ongoing plus new awards) will be executed during FY 2024, iteratively testing, validating, and refining multiple elements or segments of the initiative's 'Industrial Skills Workforce Development Ecosystem Model.' The intent is to produce increasing levels of real-world system maturity, harmonization/integration and effectiveness as depicted in the model. Many ongoing and to-be awarded NIIS efforts are designed to familiarize students presently in the K-12 pipeline with manufacturing competencies, and to introduce them to skillsets needed to support the Defense Industrial Base.

Submarine Industrial Workforce: IBAS, in partnership with the Navy submarine enterprise, will continue to invest in the industrial base's development of the necessary recruitment functions, education and training programs, and worker retention/wrap-around support for critical workforce development needs. The objective is to accelerate the path to establishing at-scale regional training systems and other workforce pipeline delivery capability to provide sufficient numbers of "ready to work" high skill technical tradespeople supporting production levels meeting the nuclear Navy's submarine modernization requirements. This includes identifying new workforce supply sources and opportunities for disadvantaged/underserved and underrepresented populations through informed data analytics. Efforts will continue to focus on priority states/regions where key suppliers reside. Continuing to build-out regional training systems in New England and Virginia, expanding focus to the Great Lakes region, and West Coast. Also continuing to address critical workforce issues supporting Indo-Pacific sustainment needs, such as the introduction of advanced training programs and the associated curricula for skilled professionals in the realms of welding, machining, non-destructive testing, fiber optics and additive manufacturing. This strategy relies on the use of regional coordinators to help establish and improve essential organizational regional relationships and better align DoD, other USG agency capabilities, state/local, and nongovernmental investments in each defense-critical region.

FY 2023 efforts included a contract awarded to supplement the submarine industrial base (SIB) with an additional builder of steel hull modules for the Columbia Class (SSBN 826) to improve throughput and to retain talented tradespeople while the Littoral Combat Ship production line comes to an end. FY 2024 will see an award for a lead system integrator to coordinate and orchestrate joint IBAS, PEO SSBN initiatives, bringing the requisite bandwidth to manage a growing and diverse portfolio of SIB marketing efforts and direct workforce augmentation programs.

2. Critical Minerals Sector

Rare Earth Elements (REE): Continue efforts initiated in prior years to establish, sustain, and improve domestic rare earth capabilities, value-added manufacturing, and essential commercial product production. To meet current and growing demand, expand light REE (LREE) capability through creation of a second domestic source. These critical activities must continue despite

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
new supply chain challenges including non-allied export controls on materials & technology as well as dramatically increased costs and lead times. Continue the design and scaling of two domestic HREE processing lines and one LREE line in support of the DoD's efforts to address supply chain risks associated with the dependence on rare earth elements from foreign non-allied countries. Initiate efforts to reduce dependence on non-allied countries for essential equipment, minerals, and materials for the processing of REEs. Continue to support and explore prototype technologies and processes for REE separation and processing to support new domestic sources. 3. Castings and Forgings (C&F) and Machine Tools Increased the pace and scope of research into ways to supplement or obviate the need for cast and forged products, and to leverage the benefits of Industry 4.0 capabilities, including but not limited to industrial automation and robotics. Continued work with the Navy to accelerate planned metalworking process improvement and workforce development efforts, reconstitute casting and forging-related capabilities for materials processing and welding/joining plus additive manufacturing, began to develop modern computational tools to support advanced applied metallurgy, and initiated efforts to reduce barriers to entry posed by material and part qualification processes. Worked with the Army to improve production and enabling capabilities at key suppliers of aviation and ground combat systems. Conducted a study to effort to understand the capabilities of, and, where appropriate, recommend specific investments in C&F-related joint/government/industry/academic centers of excellence. Began execution of projects to provide timely, assured access to the raw and refined metals (including bar and plate stock, wire, and powder) and other materials, semi-fabricated products, and refractories needed to produce the cast, forged, and additively manufactured parts required to equip and sustain U.S. and other forces as required to fulfill national strategic guidance (i.e., the National Security Strategy and National Defense Strategy) and published Operations Plans and Concept Plans. Conducted analyses to refine the Defense Casting and Forging Industrial Base Implementation Plan. 4. Energy Storage and Batteries Conduct efforts that 1) assesses Department of the Airforce requirements for energy storage and battery, 2) optimize the development of a DOD Lithium Battery Database to enable DOD battery standardization and facilitates selection of common battery factors for the Services, 3) ensure the availability of lithium battery safety expertise for joint military efforts, and 4) analyzes supply chain risks and work force needs to support the DOD in mitigating the risks identified in these studies. These efforts will better position the DOD to leverage affordable domestic battery production for Electric Vehicles and other applications. 5. Kinetic Weapons (Hypersonics)			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue industrial base projects improving U.S. manufacturing capabilities and expand capacity for hypersonics programs in coordination with other OSD and Military Service organizations. Efforts target critical paths to increase capacity of existing suppliers, establish second sources and improve production capability to meet requirements. Six new and three ongoing projects started in FY 2023 continue in development to help drive cost down and increase affordability to field hypersonic weapon systems for the Navy and Army. An affordability study continues to assess potential investments in hypersonic supply chains addressing cost reductions and improved schedule for deliver. This study will inform FY 2025 investments. 6. Microelectronics FY 2024 Plans: 1. Workforce Industrial Skills Development and Acceleration (National Imperative for Industrial Skills (NIIS) initiative): Roughly 40 NIIS portfolio pilot projects (ongoing plus new awards) will be executed during FY 2024, iteratively testing, validating, and refining multiple elements or segments of the initiative's 'Industrial Skills Workforce Development Ecosystem Model.' The intent is to produce increasing levels of real-world system maturity, harmonization/integration and effectiveness as depicted in the model. Many ongoing and to-be awarded NIIS efforts are designed to familiarize students presently in the K-12 pipeline with manufacturing competencies, and to introduce them to skillsets needed to support the Defense Industrial Base. Submarine Industrial Workforce: IBAS, in partnership with the Navy submarine enterprise, will continue to invest in the industrial base's development of the necessary recruitment functions, education and training programs, and worker retention/wrap-around support for critical workforce development needs. The objective is to accelerate the path to establishing at-scale regional training systems and other workforce pipeline delivery capability to provide sufficient numbers of "ready to work" high skill technical tradespeople supporting production levels meeting the nuclear Navy's submarine modernization requirements. This includes identifying new workforce supply sources and opportunities for disadvantaged/underserved and underrepresented populations through informed data analytics. Efforts will continue to focus on priority states/regions where key suppliers reside. Continuing to build-out regional training systems in New England and Virginia, expanding focus to the Great Lakes region, and West Coast. Also continuing to address critical workforce issues supporting Indo-Pacific sustainment needs, such as the introduction of advanced training programs and the associated curricula for skilled professionals in the realms of welding, machining, non-destructive testing, fiber optics and additive manufacturing. This strategy relies on the use of regional coordinators to help establish and improve essential organizational regional relationships and better align DoD, other USG agency capabilities, state/local, and nongovernmental investments in each defense-critical region.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2023 efforts included a contract awarded to supplement the submarine industrial base (SIB) with an additional builder of steel hull modules for the Columbia Class (SSBN 826) to improve throughput and to retain talented tradespeople while the Littoral Combat Ship production line comes to an end. FY 2024 will see an award for a lead system integrator to coordinate and orchestrate joint IBAS, PEO SSBN initiatives, bringing the requisite bandwidth to manage a growing and diverse portfolio of SIB marketing efforts and direct workforce augmentation programs. 2. Critical Minerals Sector Rare Earth Elements (REE): Continue efforts initiated in prior years to establish, sustain, and improve domestic rare earth capabilities, value-added manufacturing, and essential commercial product production. To meet current and growing demand, expand light REE (LREE) capability through creation of a second domestic source. These critical activities must continue despite new supply chain challenges including non-allied export controls on materials & technology as well as dramatically increased costs and lead times. Continue the design and scaling of two domestic HREE processing lines and one LREE line in support of the DoD's efforts to address supply chain risks associated with the dependence on rare earth elements from foreign non-allied countries. Initiate efforts to reduce dependence on non-allied countries for essential equipment, minerals, and materials for the processing of REEs. Continue to support and explore prototype technologies and processes for REE separation and processing to support new domestic sources. 3. Castings and Forgings (C&F) and Machine Tools Increased the pace and scope of research into ways to supplement or obviate the need for cast and forged products, and to leverage the benefits of Industry 4.0 capabilities, including but not limited to industrial automation and robotics. Continued work with the Navy to accelerate planned metalworking process improvement and workforce development efforts, reconstitute casting and forging-related capabilities for materials processing and welding/joining plus additive manufacturing, began to develop modern computational tools to support advanced applied metallurgy, and initiated efforts to reduce barriers to entry posed by material and part qualification processes. Worked with the Army to improve production and enabling capabilities at key suppliers of aviation and ground combat systems. Conducted a study to effort to understand the capabilities of, and, where appropriate, recommend specific investments in C&F-related joint/government/industry/academic centers of excellence. Began execution of projects to provide timely, assured access to the raw and refined metals (including bar and plate stock, wire, and powder) and other materials, semi-fabricated products, and refractories needed to produce the cast, forged, and additively manufactured parts required to equip and sustain U.S. and other forces as required to fulfill national strategic guidance (i.e., the National Security Strategy and National Defense Strategy) and published Operations Plans and Concept Plans. Conducted analyses to refine the Defense Casting and Forging Industrial Base Implementation Plan.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
4. Energy Storage and Batteries Conduct efforts that 1) assesses Department of the Airforce requirements for energy storage and battery, 2) optimize the development of a DOD Lithium Battery Database to enable DOD battery standardization and facilitates selection of common battery factors for the Services, 3) ensure the availability of lithium battery safety expertise for joint military efforts, and 4)analyzes supply chain risks and work force needs to support the DOD in mitigating the risks identified in these studies. These efforts will better position the DOD to leverage affordable domestic battery production for Electric Vehicles and other applications. 5. Kinetic Weapons Hypersonics: Continue industrial base projects improving U.S. manufacturing capabilities and expand capacity for hypersonics programs in coordination with other OSD and Military Service organizations. Efforts target critical paths to increase capacity of existing suppliers, establish second sources and improve production capability to meet requirements. Six new and three ongoing projects started in FY 2023 continue in development to help drive cost down and increase affordability to field hypersonic weapon systems for the Navy and Army. An affordability study continues to assess potential investments in hypersonic supply chains addressing cost reductions and improved schedule for deliver. This study will inform FY 2025 investments. 6. Microelectronics Secure Packaging – Eight efforts initiated in FY 2023 continue to establish a US-owned, domestic, trusted, pure-play and open-access Advanced Packaging Ecosystem for low volume production of 2.5-D and 3-D Advanced System Integration and Packaging secure solutions. Targeted activities and capabilities include tool acquisition and equipment engineering to support advanced packaging manufacturing along with developing secure microelectronics solutions and demonstrators. Targeted processes include wafer preparation and wafer bumping capabilities on 300mm substrates, advanced interposer manufacturing capability for radiofrequency (RF) applications, and Fan-Out Wafer-Level Packaging capability . Domestic access and sourcing of materials and chemicals is being established. Security solutions are advancing towards completion. Prototype development and planning is anticipated to be about 25% completed. Enterprise Parts Management System (EPMS) – Activity primarily consists of system development to include: completion of the PDR, 50% progress toward the critical design review, and minimum viable product development and delivery. Efforts also focus on delivery of the Life-cycle Sustainment and Systems Engineering Plans. Policy and requirements development will continue to ensure full functionality, integration, and adoption of EPMS.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Radar Frequency (RF) Microelectronics – Effort focuses on design and development of Prototype X-band Radar microelectronic components for Homeland Cruise Missile Defense to be used for the Fire Control Radar program. Activities will include addressing supply chain risks by adapting commercial technology to defense applications and improvements to provide critical SWAP-C advantages. Digital Engineering/Cloud Compute – Activity develops, extends, and maintains Digital Engineering infrastructure. Additionally, efforts include selection and acquisition of EDA tools and IP licenses, development of cost-shared based pilots for tech insertion, and establishment of a Tri-Service Working Group to oversee “Common” IP licensing and maximize benefits to all services. Printed Circuit Board (PrCB) - Establishes Tri-Service Working Group to prioritize investments in on-shoring of PrCB capabilities, perform an industrial base assessment and gap analyses, and develop a Tri-Service PrCB Roadmap that addresses industrial base shortfalls. ***FY 2025 Plans:*** 1. Workforce Industrial Skills Development and Acceleration (National Imperative for Industrial Skills (NIIS) initiative): The portfolio of over 40 pilot efforts funded in FY 2024 will continue in FY 2025 at various planned programmatic stages, iteratively testing, validating and refining multiple elements or segments of the initiative’s ‘Industrial Skills Workforce Development Ecosystem Model.’ The intent is to produce increasing levels of real-world system maturity, harmonization/integration and effectiveness as depicted in the model. Many ongoing and to-be awarded NIIS efforts are designed to familiarize students presently in the K-12 pipeline with manufacturing competencies, and to introduce them to skillsets needed to support the Defense Industrial Base. Submarine Industrial Workforce: IBAS, in partnership with the Navy submarine enterprise, will continue to invest in the industrial base’s development of the necessary recruitment functions, and education and training programs, and worker retention/wrap-around support for critical workforce development needs. The sustained objective is to accelerate the path to establishing at-scale regional training systems and other workforce pipeline delivery capability to provide sufficient numbers of “ready to work” high skill technical tradespeople supporting production levels meeting the nuclear Navy’s submarine modernization requirements. This includes identifying new workforce supply sources and opportunities for disadvantaged/underserved and underrepresented populations through informed data analytics. Efforts will continue to focus on priority states/regions where key suppliers reside. Continue to build-out regional training systems in New England and Virginia, Great Lakes region, and West Coast, with continued special focus on Indo-Pacific sustainment needs, with the continuation of advanced training programs and the associated curricula for skilled professionals in the realms of welding, machining, non-destructive testing, fiber optics and additive manufacturing. This strategy relies on the use of regional coordinators to help establish and improve essential organizational regional relationships and better align DoD, other USG agency capabilities, state/local, and nongovernmental investments in each defense-critical region.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
2. Critical Minerals Sector Rare Earth Elements (REE): Continue efforts initiated in prior years to establish, sustain, and improve domestic rare earth capabilities, value-added manufacturing, and essential commercial product production. Continue to address new supply chain challenges including, non-allied export controls on materials and technology as well as dramatically increased costs and lead times. Prioritize investment in midstream production of REE products through metallization and magnetization projects, in line with the Administration's goal of a domestic mine-to-magnet supply chain. Expand support for critical upstream capabilities in response to market forces and anticipated increased demand. Continue engineering and construction of two domestic REE HREE processing lines and one LREE processing line in support of the DoD's efforts to address supply chain risks associated with the dependence on REE from foreign non-allied countries. Continue efforts initiated in prior years to reduce dependence on non-allied countries for essential equipment and materials for the processing of REEs. Continue to support and explore prototype technologies and processes for REE separation and processing to support new domestic sources, with increased emphasis on recycling. Chemical Energetics: launch efforts to sustain and expand domestic capacities for priority chemicals in support of the DoD's energetics and munitions supply chain. 3. Castings and Forgings (C&F) and Machine Tools In FY 2025, the IBAS program will leverage a significant increase in funding detailed in the Defense Casting and Forging Industrial Base Implementation Plan to deliver timely changes to Industry 4.0-enabled production and metrology processes, automated/ robotics equipment, and computational tools that speed and supplement the production of cast and forged products, as well as research into advanced/alternative materials, products, and processes. IBAS-sponsored, capabilities for quickly educating and training new metalworkers and Government metals experts began to produce qualified workers with the up-to-date knowledge, skills, and abilities to succeed in metalworking and related fields in the Organic Industrial Base (OIB) and commercial industrial base. Developed and began to execute specific plans to right size and improve the capabilities of C&F-related joint/government/ industry/academic centers of excellence. Continued execution of specific projects to provide timely, assured access to the raw and refined metals (especially titanium, modern alloys, and refractory metals) in the form of bar and plate stock, wire, and powder, as well as other materials, semi-fabricated products, and ceramic refractories needed to produce superior cast, forged, and additively manufactured parts. Developed and maintained data analysis tools to inform analyses to quickly match DIB firms with C&F product suppliers and refine the cross-Service casting and forging strategy. Continued to refine the Implementation Plan as conditions evolved, to support development and execution of new projects as needed.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
4. Energy Storage and Batteries Conduct efforts that 1) assess Department of the Air Force requirements for energy storage and battery, 2) optimize the development of a DOD Lithium Battery Database to enable DOD battery standardization and facilitates selection of common battery factors for the Services, and 3) ensure the availability of lithium battery safety expertise for joint military effort.			
5. Kinetic Weapons Hypersonics Facilitate investments targeting capability and affordability of hypersonic weapon systems in coordination with the Services and OSD stakeholders. Continue industrial base improvement and expansion for hypersonics programs in coordination with other OSD and U.S. Military Service organizations. Nine ongoing projects continue to help drive cost down and increase capability to field hypersonic weapon systems for the Navy and Army. Our efforts will ultimately transition this capability into a program of record. Current major developments: 1. Affordable Thermal Protection System: numerous thermal protection system development efforts are underway and are a critical objective for the ICAMs program. The development and testing of these efforts are planned. Solid Rocket Motor Second Source qualification a second source for Solid Rocket Motors will be executed in FY 2025 . 3. Affordability Study: the FY 2024 affordability study informed the FY 2025 investment plan to execute between 5 and 10 new efforts addressing capability and affordability for hypersonic supply chains. All efforts focus on new and novel technologies designed to increase manufacturability with significantly reduced costs when fully developed. Furthermore, these efforts foster competition, innovation, cost savings potentials, and reaffirming technological capability in this technology. This funding request is different from FY 2024 as we are moving into a more mature phase of technology development and have additional industry partners with new capabilities. This funding provides new technologies for hypersonic and kinetic weapons systems that will reduce cost and accelerate adoption and integration of the technology, thus enabling the use of such weapons in theater with reduced cost prohibitors. In addition, the resultant capabilities of this funding will allow the US Military to demonstrate and claim hypersonic weapon capability in the global deterrence mission.			
6. Microelectronics			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Secure Packaging – Eight efforts initiated in FY 2023 continue to establish a US-owned, domestic, trusted, pure-play and open-access Advanced Packaging Ecosystem for low volume production of 2.5-D and 3-D Advanced System Integration and Packaging secure solutions. Targeted activities and capabilities include installing, qualifying, and brining tooling online to support advanced packaging manufacturing along with developing secure microelectronics solutions and demonstrators. By FY 2025, efforts will shift to final equipment acceptance and process qualification. Targeted processes continue to include wafer preparation and wafer bumping capabilities on 300mm substrates, advanced interposer manufacturing capability for radiofrequency (RF) applications, and Fan-Out Wafer-Level Packaging capability. Additionally, security solutions will be moving toward completion and prototype development and planning will be about 50% completed. Enterprise Parts Management System (EPMS) – Activity will primarily consist of system development to include completion of the CDR and initial minimum viable product development and delivery. Policy will continue to be refined to ensure full functionality, integration and adoption of EPMS. Radar Frequency (RF) Microelectronics – Efforts will continue developing a Prototype X-band Radar for Homeland Cruise Missile Defense to be used for the Fire Control Radar program. Activities will include addressing supply chain risks by adapting commercial technology to defense applications and improvements to provide critical SWAP-C advantages. Digital Engineering/Cloud Compute – BY FY 2025, the contract will be awarded for the Digital Engineering infrastructure. Efforts will focus on procurement of EDA tools and IP licenses, initiation of cost-shared based pilots for tech insertion identified during FY 2024, and oversight of the Tri-Service Working Group to oversee “Common” IP licensing to maximize benefits to all services. Printed Circuit Board (PrCB) – Activity will include oversight for the Tri-Service Working Group to prioritize investments in on-shoring of PrCB capabilities, overseeing industrial base assessment and gap analyses, and maintaining Tri-Service PrCB Roadmap that addresses industrial base shortfalls. Investments will also be initiation in identified Service priorities for PrCB domestic/trusted ally capabilities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2025 P819 IBAS increase of $79.392 million reflects an increase for significant issues that include Castings and Forgings infrastructure investments to implement automation and improve efficiencies. The increase also reflects OSD internal realignment for other DOD priorities to include Kinetic Weapons (Hypersonics).			
Accomplishments/Planned Programs Subtotals	560.736	1,017.141	1,099.243

	FY 2023	FY 2024
Congressional Add: Advanced Nanomaterials Manufacturing / Metal-organic frameworks	5.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

	FY 2023	FY 2024
FY 2023 Accomplishments: Designed a post-processing Dual-Use Manufacturing Prototype Line (DUMPL) specifically for MOF (synthesis reactors are available for rent). Procure, Install, Assemble and begin qualification of the DUMPL Line.		
Congressional Add: Automated textile manufacturing ***FY 2023 Accomplishments:*** Expanded partnerships to prototype and implement automated manufacturing processes for advanced textiles needed for defense use and development of associated workforce curricula and training programs needed for successful industry adoption and use.	7.500	-
Congressional Add: Interdisciplinary Center for Advanced Manufacturing Systems ***FY 2023 Accomplishments:*** Continued to expand workforce development projects related to digital engineering and systems engineering technical training programs.	10.000	-
Congressional Add: Precision Optics Manufacturing ***FY 2023 Accomplishments:*** Continued to grow the number of high schools and 2-year colleges teaching precision optics curricula, and consequently, continue growing the annual pipeline of new, qualified technicians. This project has a goal of 800 optics technicians per year by 2025, as originally planned in the project's 5-year commitment to address the DoD's critical shortage of precision optics technicians.	10.000	-
Congressional Add: Accelerated training in defense manufacturing ***FY 2023 Accomplishments:*** Continued to increase the number of skilled workers through the ADTM program that cuts training time up to 75 percent to support the defense industrial base.	5.000	-
Congressional Add: Advanced Headborne Systems Manufacturing ***FY 2023 Accomplishments:*** Provided open competition and target FY 2023 Q3 for award and kick-off.	5.000	-
Congressional Add: Carbon/Carbon Industrial Base Enhancement ***FY 2023 Accomplishments:*** Continued to increase capacity for carbon-carbon material production for high temperature applications.	3.000	-
Congressional Add: Career and Technical Education Pilot ***FY 2023 Accomplishments:*** Continued to conduct prototyping efforts that expand career and technical education in industrial skills.	10.000	-
Congressional Add: Digital Thread Manufacturing Demonstration	8.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

	FY 2023	FY 2024
FY 2023 Accomplishments: Continued execution of projects that promote the adoption of advanced technologies, skilled workforce development, and the integration of digital tools (especially in situ sensors and metrology capabilities) by current and prospective defense manufacturers.		
Congressional Add: Resilient Manufacturing Ecosystem ***FY 2023 Accomplishments:*** Continued to expand micro-defense additive manufacturing ecosystem focused on transitioning materials, processes, equipment and people into a production environment.	5.000	-
Congressional Add: Ruggedized Transceivers ***FY 2023 Accomplishments:*** The FY 2023 effort is continuing the qualification of manufacturing capacity of aerospace-grade fiber optic transceivers capable of data transport of up to 200 Gbps over multimode fiber.	7.500	-
Congressional Add: Advanced Design and Engineering Capabilities for Small Businesses ***FY 2023 Accomplishments:*** Established partnerships with industry, academia, and the NIST MEP program to create and deliver training in the use of advanced design and engineering capabilities by small businesses.	12.000	-
Congressional Add: Advanced Electrochromic Manufacturing Program ***FY 2023 Accomplishments:*** Completed first phase of two-year effort to expeditiously and affordably manufacture advanced electrochromic solutions that provide safe, effective eye protection to U.S. military operational personnel in the field.	5.000	-
Congressional Add: Advanced Thermoplastics Demonstration ***FY 2023 Accomplishments:*** Established partnerships to execute the first phase of the three-year Advanced Composite Assembly Innovation (ACAI) project, producing and testing a thermoplastic composite structure for use in key structures on Navy and Marine Corps aircraft.	4.000	-
Congressional Add: Aluminum Armor Plating ***FY 2023 Accomplishments:*** Established partnerships to prototype and implement the production of advanced aluminum armor plating for use in military applications.	1.500	-
Congressional Add: Automated Integrated Metrology ***FY 2023 Accomplishments:*** Continued and expanded existing partnerships to develop and execute projects that demonstrate and accelerate the creation and use of automated integrated metrology capabilities in production machines (both additive and subtractive) across a variety of metal and composite materials.	5.000	-
Congressional Add: Demonstration Scale of REE from Coal Ash Technology	30.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

	FY 2023	FY 2024
FY 2023 Accomplishments: Established a full-scale plant to extract rare earth elements from coal ash. Enables scale up from small scale demonstration project previously funded by IBAS which proved out feasibility and process for commercial scale.		
Congressional Add: Digital Design and Engineering Demonstration ***FY 2023 Accomplishments:*** Established partnership to prototype and develop project-based industrial workforce training in the theory and practice of digital design and engineering for military applications.	5.500	-
Congressional Add: Expanding U.S. Defense Workforce ***FY 2023 Accomplishments:*** Conducted prototyping efforts to expand U.S. defense workforce.	20.000	-
Congressional Add: Hybrid Manufacturing for Lightweight Defense Components ***FY 2023 Accomplishments:*** Leveraged existing partnerships to develop and execute projects that accelerate the application of hybrid (additive plus subtractive) manufacturing processes, a variety of metal and composite materials, and advanced digital metrology to the rapid production of lightweight defense components.	5.000	-
Congressional Add: Munitions Supply Chain Diversification ***FY 2023 Accomplishments:*** Focused on sub-tier manufactures for munitions production.	20.000	-
Congressional Add: On-Shore Advanced Microelectronic Packaging for Strategic Mission Enablement ***FY 2023 Accomplishments:*** Developed advanced packaging manufacturing technology and capabilities to address gaps in the domestic ecosystem.	40.000	-
Congressional Add: On-Shoring Navy Battery Cells ***FY 2023 Accomplishments:*** Developed advanced battery manufacturing technology and capabilities to address gaps with domestic sourcing of cells.	10.000	-
Congressional Add: Partnerships For Manufacturing Training Innovation ***FY 2023 Accomplishments:*** Conducted prototyping effort to build partnerships for manufacturing training program.	7.000	-
Congressional Add: Systems Engineering Technology (SET) Apprenticeship and Internship Program ***FY 2023 Accomplishments:*** Continued to expand systems engineering technician training program.	1.200	-
Congressional Adds Subtotals	242.200	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

NA

D. Acquisition Strategy

The Innovation Capabilities and Modernization Office established the Government-run Cornerstone Other Transaction Agreement (COTA) in 2018 to award the majority of our IBAS program projects. COTA leverages expertise and personnel at the Army Contracting Command in Rock Island, IL to execute Defense Industrial Base (DIB) resiliency and supply chain initiatives that focus on prototype projects, which, enables increasing DIB capabilities and capacities over a broad range of DoD requirements. Other acquisition vehicles such as the General Services Administration and other Military Service and Defense Agency vehicles are used as required if IBAS program requirements exceed COTA's annual capacity.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	Project (Number/Name) 819 / *Industrial Base Analysis and Sustainment*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IBAS Baseline Program Efforts - Prior Years	C/Various	various : various	299.523	-		-		-		-		-	Continuing	Continuing	-
Workforce Initiatives	C/FFP	SE New Eng Def Ind Assoc; Senedia; Auburn Univ; TX A&M; Americom; RD Solutions; Inst Advanced Learning; VT Tech Coll; Aeromarck; IACMI; BG Workforce Solutions; 202 Group; Poplicus; Productive Res : Multiple States	138.822	234.500	Jun 2023	263.500	Jun 2024	112.150	Jun 2025	-		112.150	Continuing	Continuing	-
Critical Chemicals: Heavy Rare Earth Elements Supply Chain Resiliency	C/FFP	MP Mine Operations LLC & Lynas LLC : CA & Texas	41.863	50.000	Jun 2023	227.692	Sep 2024	192.692	Jun 2025	-		192.692	Continuing	Continuing	-
Technical Initiatives Other: Adv Headborne sys; carbon/carbon IB; lead-free; directed energy; enhanced digital; freeze dried plasma; metal organic frameworks; pilot mask technology; radar technolkogy	C/FFP	Multiple : Multiple	157.888	18.303	Sep 2023	20.055	Mar 2024	20.450	Jun 2025	-		20.450	Continuing	Continuing	-
Castings and Forgings (Advanced Machine Tools)	FFRDC	Oakridge National Laboratories : Oakridge, TN	51.174	32.500	Jun 2023	172.300	Jun 2024	293.700	Jun 2025	-		293.700	Continuing	Continuing	-
Microelectronics	C/FFP	Multiple : Multiple	8.000	96.204	Jun 2023	310.284	Jun 2024	355.326	Jun 2025	-		355.326	Continuing	Continuing	-
Hypersonics Weapons Components	C/FFP	Multiple : Multiple	-	118.000	Jun 2023	10.000	Jun 2024	110.000	Jun 2025	-		110.000	Continuing	Continuing	-
Congressional Adds FY 2023 - details pending	C/TBD	TBD : TBD	-	242.200		-		-		-		-	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	Project (Number/Name) 819 / *Industrial Base Analysis and Sustainment*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	697.270	791.707		1,003.831		1,084.318		-		1,084.318	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Army NASA Air Force (JANNAF) Executive Committee Support	C/FFP	Johns Hopkins : MD	0.894	0.265	Sep 2023	0.134	Sep 2023	-		-		-	Continuing	Continuing	-
		Subtotal	0.894	0.265		0.134		-		-		-	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OSD SETA Support	Various	Frontier Technologies Inc : VA	22.875	5.271	Mar 2023	7.403	Mar 2024	9.049	Jun 2025	-		9.049	Continuing	Continuing	-
Army/Navy Program Management	MIPR	DEVCOM CBC, NSWC Crane, PEO Stri : IL/IN/FL	6.487	4.317	Dec 2022	4.397	Dec 2023	4.500	Jun 2025	-		4.500	Continuing	Continuing	-
IBAS Technical Teams Support	C/FFP	Booz Allen Hamilton : Alexandria, VA	1.376	1.376	Mar 2023	1.376	Dec 2023	1.376	Jun 2025	-		1.376	Continuing	Continuing	-
		Subtotal	30.738	10.964		13.176		14.925		-		14.925	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	728.902	802.936		1,017.141		1,099.243		-		1,099.243	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

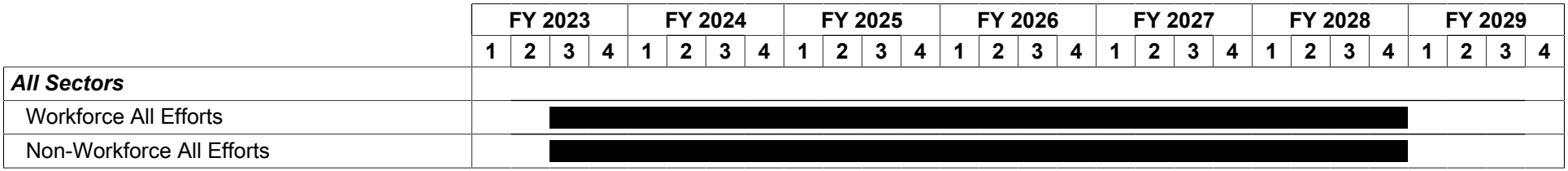

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607210D8Z / *Industrial Base Analysis and Sustainment Support*	**Project (Number/Name)** 819 / *Industrial Base Analysis and Sustainment*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
All Sectors				
Workforce All Efforts	3	2023	4	2028
Non-Workforce All Efforts	3	2023	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607310D8Z / *Counterproliferation Modernization*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	69.778	14.862	12.713	11.309	-	11.309	13.332	12.511	12.733	12.972	-	-
242: *Counterproliferation Modernization*	69.778	14.862	12.713	11.309	-	11.309	13.332	12.511	12.733	12.972	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence, and Build Sustainable and Long-Term Advantage.

The Counterproliferation Modernization (formerly, Countering Weapons of Mass Destruction (CWMD) Systems) research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: "improving our understanding of the operational environment – including in the information domain; sowing doubt among competitors that they would be able to achieve their objectives and conduct unattributed coercive actions; disrupting competitor actions that would afford them warfighting advantages; reinforcing our own warfighting advantages; and enhancing our interoperability and access to address acute forms of coercion" (2022 National Defense Strategy (NDS)).

RDAs provide enhanced offensive Counterproliferation capabilities. The Counterproliferation Modernization portfolio enables DoD to prevent adversary development, acquisition, transfer, deployment, and use of weapons of mass destruction. Likewise, the portfolio's investments deliver capabilities to "take action against actors of concern and reduce access to WMD development pathways" and "delays further development, degrades capabilities where possible, and, if necessary, prevents WMD use" (2022 DoD Strategy to Counter Weapons of Mass Destruction).

The Counterproliferation Modernization portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices. These LOEs create unique options across the continuum of conflict, including exquisite tactical situational awareness, the ability to rapidly generate options, low visibility methods of maneuver, and the capability to employ immediate effects without diminishing future capabilities. These LOEs enable active campaigning to support Integrated Deterrence that mitigate risk to mission and risk to force.

The Office of the Secretary of Defense uses the Counterproliferation Modernization portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment strategy is used to meet emergent operational and capability needs validated by the Joint Force, yielding new fielded capabilities within one to two years.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607310D8Z / *Counterproliferation Modernization*

The CWMD Systems: Operational Systems Development program invests in upgrades of and enhancements to fielded systems that counter WMD proliferation. Funds are used for integration of operational prototypes into fielded systems, or other upgrades and enhancements, including any necessary test and evaluation. Investments modernize existing counter WMD capabilities within the Department of Defense to enhance the Joint Force's lethality by upgrading and enhancing currently fielded systems. Upgraded capabilities illuminate WMD networks; exploit vulnerabilities in networks, programs, facilities, and weapons systems; and disable or defeat WMD and their delivery systems.

This program funds labor, materials, and travel requirements, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	15.427	12.713	12.481	-	12.481
Current President's Budget	14.862	12.713	11.309	-	11.309
Total Adjustments	-0.565	0.000	-1.172	-	-1.172
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.565	-			
• Defense-Wide Topline Adjustment	-	-	-1.172	-	-1.172

Change Summary Explanation

The FY 2024 to FY 2025 funding decrease represents program adjustments directed by OUSD(A&S) to align with higher priority National Defense Strategy requirements and will result in 1-2 fewer upgraded/enhanced counter WMD capabilities.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607310D8Z / *Counterproliferation Modernization*	Project (Number/Name) 242 / *Counterproliferation Modernization*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
242: *Counterproliferation Modernization*	69.778	14.862	12.713	11.309	-	11.309	13.332	12.511	12.733	12.972	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland, Provide Nuclear Deterrence, and Build Sustainable and Long-Term Advantage.

The Counterproliferation Modernization (formerly, Countering Weapons of Mass Destruction (CWMD) Systems) portfolio aligns with the National Defense Strategy objective of “dissuading, preventing, or deterring state adversaries and non-state actors from acquiring, proliferating, or using weapons of mass destruction.”

The Counterproliferation Modernization portfolio enhances warfighter lethality by developing capabilities to exploit and defeat critical nodes of nuclear, chemical and biological weapons, ballistic missile programs, and proliferation networks; additionally the program develops offensively-oriented capabilities to disrupt Weapons of Mass Destruction (WMD) proliferation networks and detect, disable, or defeat WMD and delivery systems. Investments result in capabilities fielded to the Joint Force, enabling it to reduce WMD threats and create options for the United States to prevent WMD use.

The Office of the Secretary of Defense uses the Counterproliferation Modernization portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment strategy is used to meet emergent operational and capability needs validated by the Joint Force, yielding new fielded capabilities within one to two years.

The CWMD Systems: Operational Systems Development program invests in upgrades of and enhancements to fielded systems that counter WMD proliferation. Funds are used for integration of operational prototypes into fielded systems, or other upgrades and enhancements, including any necessary test and evaluation. Investments modernize existing counter WMD capabilities within the Department of Defense to enhance the Joint Force’s lethality by upgrading and enhancing currently fielded systems. Upgraded capabilities illuminate WMD networks; exploit vulnerabilities in networks, programs, facilities, and weapons systems; and disable or defeat WMD and their delivery systems.

This program funds labor, materials, and travel requirements, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Counterproliferation Modernization	14.862	12.713	11.309

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607310D8Z / *Counterproliferation Modernization*	**Project (Number/Name)** 242 / *Counterproliferation Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The Counterproliferation Modernization program invests in upgrades of and enhancements to fielded systems that counter WMD proliferation. Funds are used for integration of operational prototypes into fielded systems, or other upgrades and enhancements, including any necessary test and evaluation. Investments modernize existing counter WMD capabilities within the Department of Defense to enhance the Joint Force's lethality by upgrading and enhancing currently fielded systems. Upgraded capabilities illuminate WMD networks; exploit vulnerabilities in networks, programs, facilities, and weapons systems; and disable or defeat WMD and their delivery systems. ***FY 2024 Plans:*** • Enhanced and upgraded multiple classified capabilities on behalf of specialized units within USSOCOM; • Enhanced and upgraded multiple classified capabilities on behalf of geographic Combatant Commands and the Services; • Enhanced and upgraded multiple classified capabilities that support operational preparation of the environment on behalf of the broader DoD CWMD Enterprise. ***FY 2025 Plans:*** • Enhance and upgrade multiple classified capabilities on behalf of specialized units within USSOCOM; • Enhance and upgrade multiple classified capabilities on behalf of geographic Combatant Commands and the Services; • Enhance and upgrade multiple classified capabilities that support operational preparation of the environment on behalf of the broader DoD CWMD Enterprise; • Continue upgrades of and enhancements to fielded systems that counter WMD proliferation across the DoD Enterprise. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY 2024 to FY 2025 funding decrease represents program adjustments directed by OUSD(A&S) to align with higher priority National Defense Strategy requirements and will result in 1-2 fewer upgraded/enhanced counter WMD capabilities.			
Accomplishments/Planned Programs Subtotals	14.862	12.713	11.309

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

The Office of the Deputy Assistant Secretary of Defense for Threat Reduction and Arms Control (ODASD(TRAC)) establishes annual priorities based on national and DoD strategies and senior leader guidance. Based on those priorities, TRAC solicits project proposals from Combatant Commands, Military Services, and Defense Agencies, and interagency partners. To be selected, a proposed project must have a validated requirement, an engaged requirement champion, a viable acquisition

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607310D8Z / *Counterproliferation Modernization*	**Project (Number/Name)** 242 / *Counterproliferation Modernization*

strategy, and a qualified program management office. A technology project must identify its starting and desired end-state Technology Readiness Level. Likewise, the end-user for any proposed project must demonstrate a long-term plan for acceptance and sustainment of a fieldable capability. Project period of performance is typically 12-24 months.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607310D8Z / *Counterproliferation Modernization*	**Project (Number/Name)** 242 / *Counterproliferation Modernization*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Upgrade fielded CWMD & Counterproliferation Systems	Various	Various : Various	16.234	3.121	Jan 2023	2.655	Jan 2024	2.375	Jan 2025	-		2.375	-	-	-
Upgrade & enhance Special Operations Forces (SOF) CWMD & Counterproliferation capabilities	MIPR	USSOCOM : TBD	20.827	6.688	Jan 2023	5.760	Jan 2024	5.089	Jan 2025	-		5.089	-	-	-
Enhance Service capabilities to detect, disable, or defeat WMD	Various	TBD : TBD	16.090	2.378	Jan 2023	2.023	Jan 2024	1.809	Jan 2025	-		1.809	-	-	-
Upgrade & enhance Geographic Combatant Command CWMD & Counterproliferation capabilities.	MIPR	TBD : TBD	16.627	2.675	Jan 2023	2.275	Jan 2024	2.036	Jan 2025	-		2.036	-	-	-
		Subtotal	69.778	14.862		12.713		11.309		-		11.309	-	-	N/A

Remarks

N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	69.778	14.862		12.713		11.309		-		11.309	-	-	N/A

Remarks

N/A.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607310D8Z / *Counterproliferation Modernization*	**Project (Number/Name)** 242 / *Counterproliferation Modernization*

Counterproliferation Modernization
BA 7 / PE 0607310D8Z

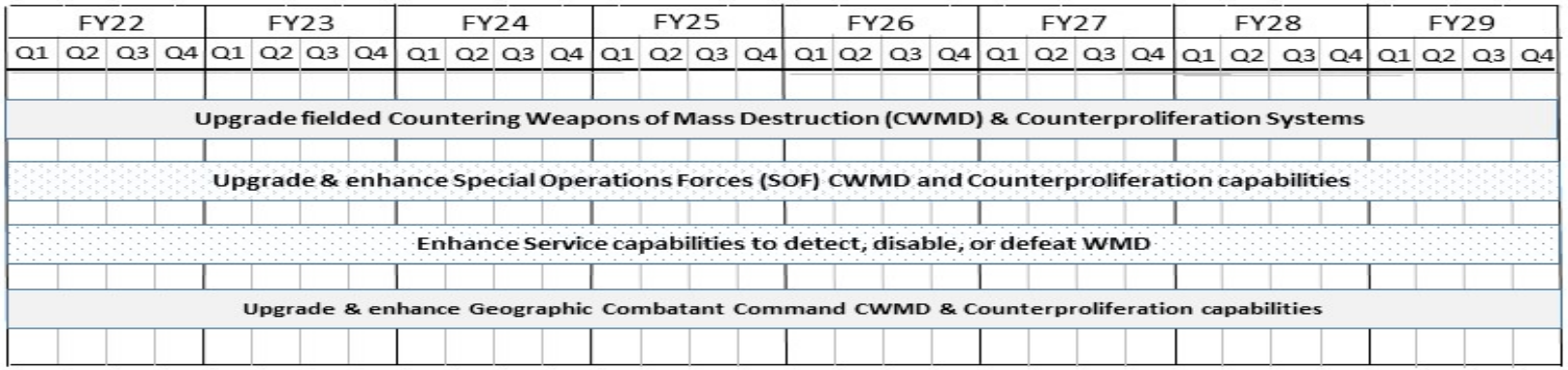

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607757D8Z / *Radiological and Nuclear Defense Modernization Operational System Development*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	-	-	1.668	0.000	1.668	3.555	3.559	3.543	3.609	Continuing	Continuing
779: *Radiological and Nuclear Defense Modernization Operational System Development*	-	-	-	1.668	0.000	1.668	3.555	3.559	3.543	3.609	Continuing	Continuing

Note

New Start (Y/N): No

This is a PE Name change from PE 0505167D8Z Domestic Prepare Against WMD to PE 0607757D8Z / Rad/Nuc Defense Modernization Operational Systems Dev. The name and PE number was changed to more accurately reflect the prescribed purpose of the Program Element.

A. Mission Description and Budget Item Justification

As a FY 2024 new start, this program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence and being prepared to prevail, and Build Sustainable and Long-Term Advantage.

The Radiological and Nuclear (R/N) Detection Gear Modernization and Procurement for the Joint Force research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: improving the Department's capability to survive and operate in the Radiological and Nuclear environment – including in the information and early warning domain; reinforcing our own warfighting advantages by providing increased capability to detect and identify radiological and nuclear threats; and enhancing our interoperability and access to address acute forms of coercion. This program is specifically geared to provide modern improved networked R/N detection, indications and identification capability to the warfighter and to upgrade obsolete equipment and increase capability to continue to operate in the R/N environment (2022 National Defense Strategy and the 2023 CWMD Strategy).

RDAs provide enhanced R/N capabilities. The Radiological and Nuclear Defense Capability Development portfolio enables DoD to provide Joint Force and National Guard capability development, acquisition and modernization funding to prepare for and respond to any emergency involving nuclear and/or radiological events in the United States; provide a capability for the Joint Force to withstand, operate through, and recover from an R/N event and will ensure DoD strategic direction aligns with the National Defense Strategy's priorities; is a necessary action to improve resilience; and promotes integrated deterrence of WMD with state, local and other federal agencies. This funding line is the only BA7 funding in the Department dedicated to providing improved R/N capability to the warfighter.

The Radiological and Nuclear Defense Capability Development portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607757D8Z / *Radiological and Nuclear Defense Modernization Operational System Development*

The Office of the Secretary of Defense uses the Radiological and Nuclear Defense Capability Development portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment strategy is used to meet emergent operational and capability needs validated by the Joint Force and the National Guard Bureau, yielding new fielded capabilities within one to two years.

The Radiological and Nuclear Defense Capability Development portfolio: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to fielded capabilities that improve capability to detect and identify radiological and nuclear threats. This program bridges the gap between basic research to accelerate and enable transition of technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry.

This program funds labor, materials, and travel to support the requirements of this program, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	1.668	0.000	1.668
Total Adjustments	0.000	0.000	1.668	-	1.668
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Realignment from PE 0505167D8Z	-	-	1.668	-	1.668

Change Summary Explanation

No funding changes in FY 2025.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607757D8Z / *Radiological and Nuclear Defense Modernization Operational System Development*	Project (Number/Name) 779 / *Radiological and Nuclear Defense Modernization Operational System Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
779: *Radiological and Nuclear Defense Modernization Operational System Development*	-	-	-	1.668	0.000	1.668	3.555	3.559	3.543	3.609	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

As a FY 2024 new start, this program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence and being prepared to prevail, and Build Sustainable and Long-Term Advantage.

The Radiological and Nuclear (R/N) Detection Gear Modernization and Procurement for the Joint Force research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: improving the Department's capability to survive and operate in the Radiological and Nuclear environment – including in the information and early warning domain; reinforcing our own warfighting advantages by providing increased capability to detect and identify radiological and nuclear threats; and enhancing our interoperability and access to address acute forms of coercion. This program is specifically geared to provide modern improved networked R/N detection, indications and identification capability to the warfighter and to upgrade obsolete equipment and increase capability to continue to operate in the R/N environment (2022 National Defense Strategy and the 2023 CWMD Strategy).

RDAs provide enhanced R/N capabilities. The Radiological and Nuclear Defense Capability Development portfolio enables DoD to provide Joint Force and National Guard capability development, acquisition and modernization funding to prepare for and respond to any emergency involving nuclear and/or radiological events in the United States; provide a capability for the Joint Force to withstand, operate through, and recover from an R/N event and will ensure DoD strategic direction aligns with the National Defense Strategy's priorities; is a necessary action to improve resilience; and promotes integrated deterrence of WMD with state, local and other federal agencies. This funding line is the only BA7 funding in the Department dedicated to providing improved R/N capability to the warfighter.

The Radiological and Nuclear Defense Capability Development portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices.

The Office of the Secretary of Defense uses the Radiological and Nuclear Defense Capability Development portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment strategy is used to meet emergent operational and capability needs validated by the Joint Force and the National Guard Bureau, yielding new fielded capabilities within one to two years.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607757D8Z / *Radiological and Nuclear Defense Modernization Operational System Development*	**Project (Number/Name)** 779 / *Radiological and Nuclear Defense Modernization Operational System Development*

The Radiological and Nuclear Defense Capability Development portfolio: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to fielded capabilities that improve capability to detect and identify radiological and nuclear threats. This program bridges the gap between basic research to accelerate and enable transition of technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry.

This program funds labor, materials, and travel to support the requirements of this program, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Radiological and Nuclear Defense Modernization Operational Systems Development	-	-	1.668
Description: Description: The Radiological and Nuclear Defense Capability Modernization: Systems Development program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to R/N Defense fielded capabilities. Significant S&T investments in prototype development by the Department of Defense, other Federal agencies, and industry are leveraged, capitalizing on mature technologies to accelerate and enable transition to fielded capabilities. Resulting fielded capabilities protect the warfighter, support indications and early warning, command and control, defend vulnerabilities in networks, programs, facilities, and weapons systems; and enable the disablement or defeat of WMD and their delivery systems. ***FY 2025 Plans:*** • Develop, transition, and field operational R/N Detection, Identification, Early warning, and Command Control capabilities to the Joint Force and the National Guard Bureau. • Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities. • Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified projects. • Continue development of Joint Personnel Dosimeter on behalf of the Joint Force. • Continue development of Radiological Detection System on behalf of the Joint Force. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** This is a PE Name change from PE 0505167D8Z Domestic Prepare Against WMD in FY 2024 to PE 0607757D8Z / Rad/Nuc Defense Modernization Operational Systems Dev in FY 2025. The name and PE number was changed to more accurately reflect the prescribed purpose of the Program Element.			
Accomplishments/Planned Programs Subtotals	-	-	1.668

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607757D8Z / *Radiological and Nuclear Defense Modernization Operational System Development*	**Project (Number/Name)** 779 / *Radiological and Nuclear Defense Modernization Operational System Development*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607757D8Z / *Radiological and Nuclear Defense Modernization Operational System Development*	Project (Number/Name) 779 / *Radiological and Nuclear Defense Modernization Operational System Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
• Develop, transition, and field operational R/N Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.	C/TBD	TBD : TBD	-	-		-		0.501	Apr 2025	-		0.501	Continuing	Continuing	-
• Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities.	C/TBD	TBD : TBD	-	-		-		0.501	Apr 2025	-		0.501	Continuing	Continuing	-
• Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified progr	C/TBD	TBD : TBD	-	-		-		0.666	Apr 2025	-		0.666	Continuing	Continuing	-
		Subtotal	-	-		-		1.668		-		1.668	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		1.668		-		1.668	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607757D8Z / *Radiological and Nuclear Defense Modernization Operational System Development*	**Project (Number/Name)** 779 / *Radiological and Nuclear Defense Modernization Operational System Development*

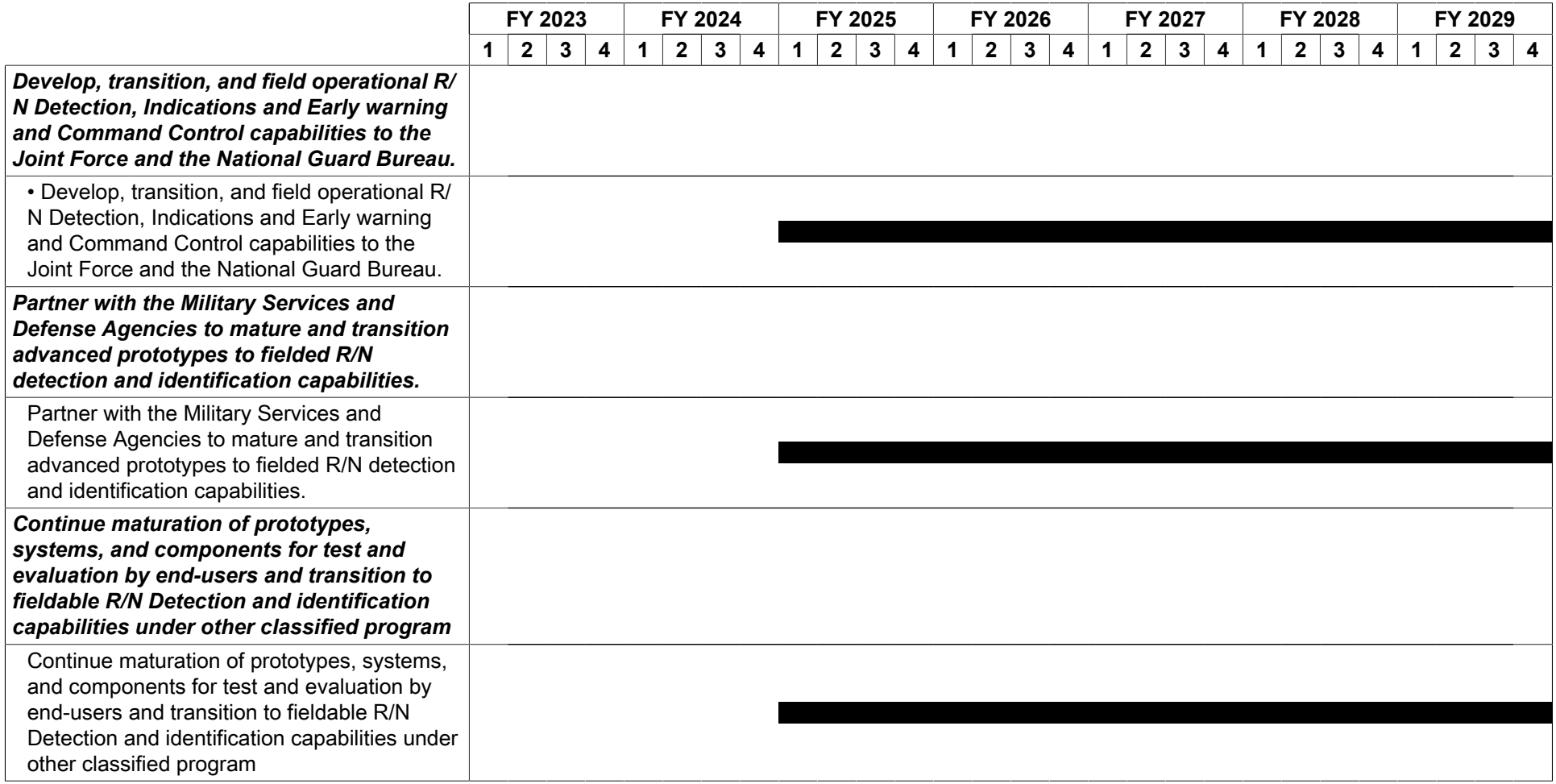


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607757D8Z / *Radiological and Nuclear Defense Modernization Operational System Development*	**Project (Number/Name)** 779 / *Radiological and Nuclear Defense Modernization Operational System Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Develop, transition, and field operational R/N Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.				
• Develop, transition, and field operational R/N Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.	1	2025	4	2029
Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities.				
Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities.	1	2025	4	2029
Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified program				
Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified program	1	2025	4	2029

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0303140D8Z / *Information Systems Security Program*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	243.024	43.208	97.171	31.127	0.000	31.127	30.662	30.951	31.508	32.009	Continuing	Continuing
140: *Information Systems Security Program (ISSP)*	243.024	43.208	97.171	31.127	0.000	31.127	30.662	30.951	31.508	32.009	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The DoD CIO information systems security program (ISSP) provides focused defense cybersecurity and information assurance technology and technical solutions research, development, testing, and integration critical to meet the Title 10 U.S. Code Section 2224 (10 U.S.C. §2224) (Defense Information Assurance Program); Public Law 113-283 (Federal Information Security Modernization Act of 2014); Office of Management and Budget (OMB) Circular A-130; DoD cybersecurity-related instruction series, such as 8500, 8510, 8520, 8530, and 8540; Executive Order 14028, “Improving the Nation’s Cybersecurity”; National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2022, Section 1528; National Cybersecurity Strategy (March 2023), OMB M-22-09, “Moving the U.S. Government Toward Zero Trust Cybersecurity Principles”; National Security Memorandum 8, “Memorandum on Improving the Cybersecurity of National Security, Department of Defense, and Intelligence Community Systems”; 2022 National Defense Strategy, and 2022 DoD Zero Trust (ZT) Strategy requirements.

ISSP supports the DoD CIO and its mission partners on: architecture, engineering, and technical matters to develop governance processes and structures; evolving and enabling a more integrated and synchronized DoD information environment that provides a shared core enterprise services network to integrate information sharing, collaboration, and close identified gaps across all mission areas; national security system protection; adopting ZT cybersecurity principles and attaining target level ZT (at a minimum) by the end of FY 2027, by providing strategic guidance, oversight, comprehensive training, and assessing proposed ZT solutions meeting target or advanced level ZT; developing the U.S. Government’s ability to prevent and defend against adversarial and/or commercial information and communications technology supply-chain attacks on its mission critical systems, networks, and devices; overseeing cybersecurity risk life-cycle management; and integrating cybersecurity standards, methods, and procedures across the DoD to achieve a robust and resilient cybersecurity posture.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0303140D8Z *I Information Systems Security Program*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	43.135	97.171	20.369	-	20.369
Current President's Budget	43.208	97.171	31.127	-	31.127
Total Adjustments	0.073	0.000	10.758	-	10.758
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.073	-	10.758	-	10.758

Change Summary Explanation

The FY 2024 program included $70 million for one-time ZT initiatives (native ZT pilots). The $9.494 million increase in the FY 2025 base program from the FY 2024 PB to the FY 2025 PB submission is due to ZT development requirements and implementing cybersecurity reference architecture.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0303140D8Z / *Information Systems Security Program*	Project (Number/Name) 140 / *Information Systems Security Program (ISSP)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
140: *Information Systems Security Program (ISSP)*	243.024	43.208	97.171	31.127	0.000	31.127	30.662	30.951	31.508	32.009	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

Same as program level mission description.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Information Systems Security Program Plans and Accomplishments	43.208	97.171	31.127

FY 2024 Plans:

$80.000 million:

• $70.000 million - ZT private cloud pilot & ZT private cloud operational environment pilot.

• $10.000 million – Enhancements to accelerate ZT capabilities across the secure internet protocol router (SIPR) networks.

These include efforts related to the DoD's ZT adoption in the non-secure (NIPR) and SIPR networks, including assessments of various ZT solutions to meet target level ZT by FY 2027.

$17.171 million:

• Work with industry to develop new technologies that upgrade legacy networks' cybersecurity and have the potential to evolve into systems that are part of a new cybersecurity architecture and command and control capability.

• Continue to develop and refine policies to support acquisition program protection strategies and oversight. Develop strategies, standards, and tools to address supply chain risk management, and continue to collaborate with private industry on commercially acceptable global sourcing and supply chain standards.

• Continue evaluating cyber activities to efficiently mitigate investment decisions, to include cybersecurity focused metrics, support policy development, refinement, and oversight, formulate programmatic advice, and participate in various collaborative advisory and governance bodies.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0303140D8Z / *Information Systems Security Program*	**Project (Number/Name)** 140 / *Information Systems Security Program (ISSP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Accelerate cloud security guidance and procedures by commercial cloud service providers and continue refining and overseeing comprehensive secure mobility processes, policies, and cybersecurity capabilities. • Continue tactical networks, coalition, and mission partner networks development and engineering support. • Continue developing and implementing strategies to defend and operate against sophisticated cyber adversaries and in large-scale cyber incidents, to include threat-based system security engineering efforts and developing critical design artifacts. • Support analyses on DoD cloud-based computing cybersecurity, applicable risk factors, and continued mitigation controls refinement, as part of the risk management framework (RMF) supporting DoD CIO's goal to accelerate DoD cloud computing adoption. • Continue refining and integrating policies with the RMF, supportive standards, guidance, efficiencies, and web-based processes to strengthen information system controls and protections. • Continue improving built-in cybersecurity, mission assurance, mitigation analyses, and vulnerability detection (hardware and software testing) in acquisitions programs. ***FY 2025 Plans:*** $17.700 million: • Continue base program initiatives in prior budget year. $7.500 million: • Collaborate with Joint Warfighting Cloud Capability cloud service providers and industry partners to produce and conduct pilot activities and proof of concept evaluations on ZT use cases, including cloud prototypes, to accelerate ZT adoption and achieve target level ZT by the end of FY 2027. $4.663 million: • Enhance SIPR network ZT capabilities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 funding decrease due to FY 2024 only ZT initiatives.			
Accomplishments/Planned Programs Subtotals	43.208	97.171	31.127

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0303140D8Z / *Information Systems Security Program*	**Project (Number/Name)** 140 / *Information Systems Security Program (ISSP)*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• PE 0303140D8Z O&M DW: *Information System Security Program*	24.093	40.912	34.457	0.000	34.457	35.064	35.650	37.138	37.856	-	-

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0303140D8Z / *Information Systems Security Program*	Project (Number/Name) 140 / *Information Systems Security Program (ISSP)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analysis	Option/ Various	Various : Various	7.527	-		80.095		10.000		-		10.000	-	-	-
Technical Engineering Services	Option/ Various	Various : Various	161.292	33.785	Feb 2023	8.500	Mar 2024	10.000	Mar 2025	-		10.000	-	-	-
Services Support	Option/ Various	Various : Various	21.474	-		0.000		0.000		-		0.000	-	-	-
		Subtotal	190.293	33.785		88.595		20.000		-		20.000	-	-	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Option/ Various	Various : Various	10.985	8.685	Mar 2023	8.576	Mar 2024	11.127	Mar 2025	-		11.127	Continuing	Continuing	-
Engineering Support	Option/ Various	Various : Various	31.084	0.738	Apr 2023	-		-		-		-	Continuing	Continuing	-
Research & Development	Option/ Various	Various : Various	10.662	-		-		0.000		-		0.000	-	-	-
		Subtotal	52.731	9.423		8.576		11.127		-		11.127	Continuing	Continuing	N/A

Remarks

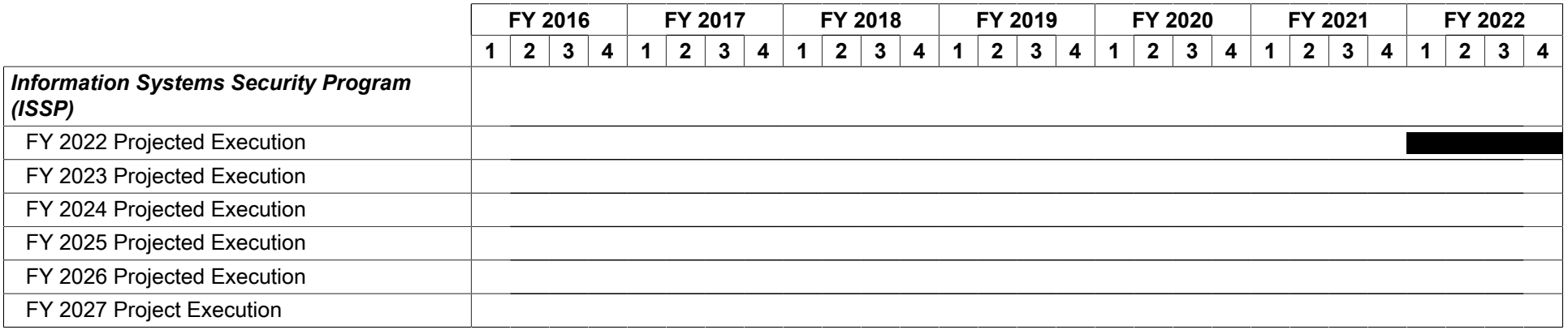
NA

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	243.024	43.208		97.171		31.127		-		31.127	Continuing	Continuing	N/A

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0303140D8Z / *Information Systems Security Program*	**Project (Number/Name)** 140 / *Information Systems Security Program (ISSP)*



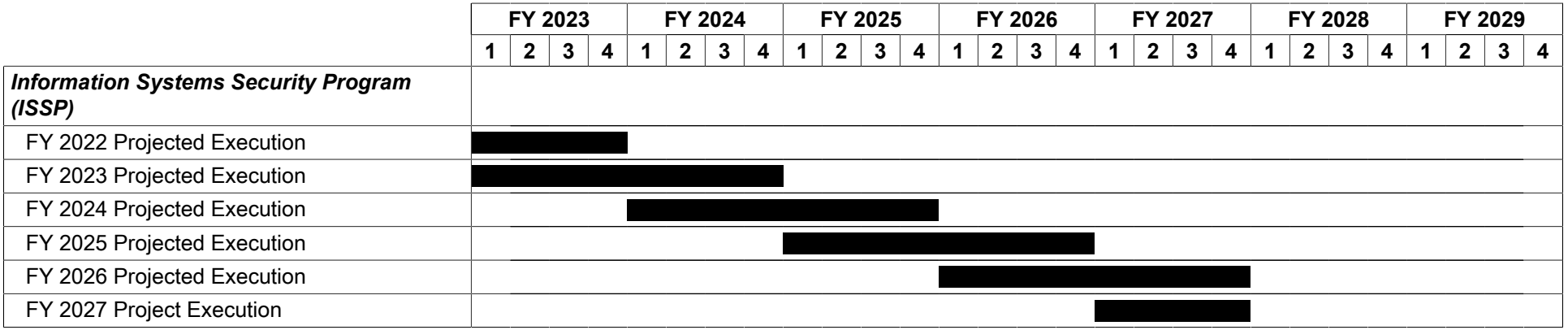


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0303140D8Z / *Information Systems Security Program*	**Project (Number/Name)** 140 / *Information Systems Security Program (ISSP)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Information Systems Security Program (ISSP)				
FY 2022 Projected Execution	1	2022	4	2023
FY 2023 Projected Execution	1	2023	4	2024
FY 2024 Projected Execution	1	2024	4	2025
FY 2025 Projected Execution	1	2025	4	2026
FY 2026 Projected Execution	1	2026	4	2027
FY 2027 Project Execution	1	2027	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305104D8Z / *Defense Industrial Base (DIB) Cyber Security Initiative*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	7.999	25.655	15.524	-	15.524	15.514	15.632	16.170	16.691	Continuing	Continuing
334: *Securing the DIB: CMMC*	0.000	7.999	25.655	15.524	-	15.524	15.514	15.632	16.170	16.691	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

The Cybersecurity Maturity Model Certification (CMMC) program continues efforts that were contained in PE 0606771D8Z, Cyber Resiliency & Cybersecurity Policy.

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to deter aggression, defend the homeland, and build sustainable and long-term advantage.

Develop, implement, and sustain a cybersecurity assessment and verification program designed to increase defense industrial base (DIB) contractors' and subcontractors' compliance with existing federal contract and controlled unclassified information (CUI) protection requirements, protecting the information from cybersecurity risks, including advanced persistent threats.

Assess the feasibility and support emerging commercial services, tools, and platforms that provide insights into DIB and DoD supply chain relevant cybersecurity threats and vulnerabilities.

Partner with the DIB sector, DoD components, and other government agencies to demonstrate cost-effective and scalable cybersecurity services that augment and/or enhance existing commercial capabilities and services. Focus on cybersecurity services for small-to-medium sized DIB companies that are critical to the DoD supply chain but lack sufficient cybersecurity capabilities to protect CUI.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305104D8Z / *Defense Industrial Base (DIB) Cyber Security Initiative*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	10.000	25.655	25.649	-	25.649
Current President's Budget	7.999	25.655	15.524	-	15.524
Total Adjustments	-2.001	0.000	-10.125	-	-10.125
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-2.001	-	-10.125	-	-10.125

Change Summary Explanation

Beginning in FY 2025, funds decreased by $10M annually due to the program's transition from version 1.0 to 2.0 and the revised CMMC's planned implementation.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Securing the DIB: CMMC	7.999	25.655	15.524
Description: Same as Mission description ***FY 2024 Plans:*** - Implement the revised CMMC framework based on the rulemaking outcome, emerging cyber threats, and DoD leadership decisions. - Codify the CMMC program in both 32 CFR and 48 CFR, and initiate DoD implementation. - Continue developing and updating required Congressional and Government Accountability Office reports and requests for information responses on the DoD CMMC program. - Continue supporting the cybersecurity-as-a-service (CaaS) development and assessment requirements. - Partner with the Defense Acquisition University and other entities to continue developing training initiatives that further DoD and DIB cybersecurity and CMMC education. - In coordination with the Defense Information Systems Agency, continue to perform enterprise Mission Assurance Support Service (eMASS) database upgrades and host services on milCloud 2.0. Complete the level 3 workflow implementation in CMMC eMASS.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305104D8Z / *Defense Industrial Base (DIB) Cyber Security Initiative*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Initiate CMMC outcome-oriented performance metrics to evaluate the program's effectiveness in enhancing DIB cybersecurity. Additionally, the program will collect process focused metrics to evaluate internal CMMC processes, which will be used to conduct predictive analyses. ***FY 2025 Plans:*** FY 2025 plans continue base program initiatives from the prior budget year. Additional initiatives are due to anticipated CMMC program transition to operational status in FY 2025, resulting in program scope change. - Operationalize the CMMC eMASS infrastructure. - Manage and update the CMMC eMASS database. - Update the CMMC requirements to remain in sync with the National Institute of Standards and Technology standards. - Initiate the CMMC performance metrics collection. - Partnerships on new and existing DoD initiatives and pilots to enhance DIB cybersecurity. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funds decreased in FY 2025 due to the program's transition from CMMC 1.0 to 2.0, with implementation scheduled in FY 2025. The Office of Small Business Programs provided funding, which reduced the funding needed to pilot DIB small business CaaS offerings.			
Accomplishments/Planned Programs Subtotals	7.999	25.655	15.524

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0305104D8Z / *Defense Industrial Base (DIB) Cyber Security Initiative*	Project (Number/Name) 334 / *Securing the DIB: CMMC*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Support Services	Option/ Various	Various : Various	-	7.999	Mar 2023	25.655	Mar 2024	15.524	Mar 2024	-		15.524	Continuing	Continuing	-
		Subtotal	-	7.999		25.655		15.524		-		15.524	Continuing	Continuing	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	7.999		25.655		15.524		-		15.524	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305104D8Z / *Defense Industrial Base (DIB) Cyber Security Initiative*	**Project (Number/Name)** 334 / *Securing the DIB: CMMC*

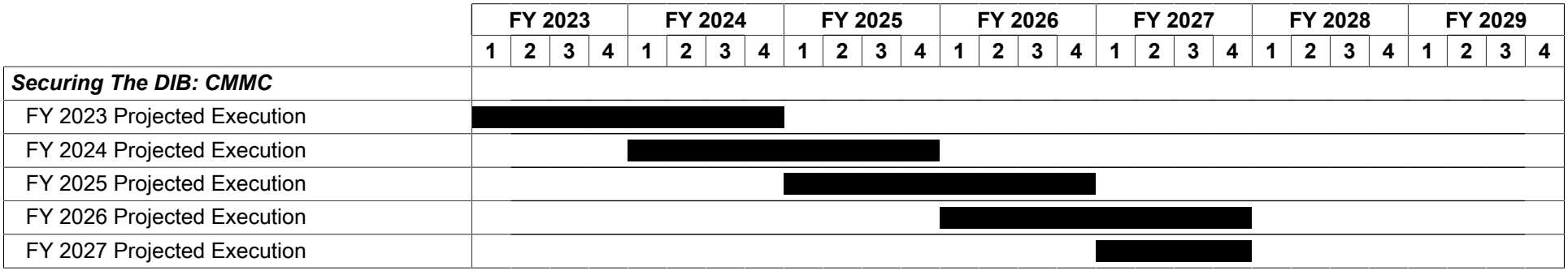


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305104D8Z / *Defense Industrial Base (DIB) Cyber Security Initiative*	**Project (Number/Name)** 334 / *Securing the DIB: CMMC*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Securing The DIB: CMMC				
FY 2023 Projected Execution	1	2023	4	2024
FY 2024 Projected Execution	1	2024	4	2025
FY 2025 Projected Execution	1	2025	4	2026
FY 2026 Projected Execution	1	2026	4	2027
FY 2027 Projected Execution	1	2027	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305172D8Z / *Combined Advanced Applications*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	39.510	52.736	42.355	-	42.355	41.501	46.536	47.771	48.892	Continuing	Continuing
333: *Combined Advanced Applications*	0.000	39.510	52.736	42.355	-	42.355	41.501	46.536	47.771	48.892	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

Combined advanced applications details are classified and reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program annual report to Congress.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	49.380	52.736	61.746	-	61.746
Current President's Budget	39.510	52.736	42.355	-	42.355
Total Adjustments	-9.870	0.000	-19.391	-	-19.391
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-9.870	-	-19.391	-	-19.391

Change Summary Explanation

FY 2025 decrease reflects program adjustments to support Combined Advanced Applications.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Combined Advanced Applications	39.510	52.736	42.355
Description: Information is classified.			
FY 2024 Plans:			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305172D8Z / *Combined Advanced Applications*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Information is classified. ***FY 2025 Plans:*** Information is classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease reflects program adjustments to support Combined Advanced Applications.			
Accomplishments/Planned Programs Subtotals	39.510	52.736	42.355

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305172D8Z / *Combined Advanced Applications*	**Project (Number/Name)** 333 / *Combined Advanced Applications*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Engineering Services	Option/ Various	Various : Various	-	17.970	Jul 2023	28.040	Jul 2024	22.658	Jul 2025	-		22.658	Continuing	Continuing	-
Services Support	Option/ Various	Various : Various	-	10.870	May 2023	12.296	Jul 2024	9.955	Jul 2025	-		9.955	Continuing	Continuing	-
		Subtotal	-	28.840		40.336		32.613		-		32.613	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	Option/ Various	Various : Various	-	10.670	Jul 2023	12.400	Jul 2024	9.742	Jul 2025	-		9.742	Continuing	Continuing	-
		Subtotal	-	10.670		12.400		9.742		-		9.742	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	39.510		52.736		42.355		-		42.355	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305172D8Z / *Combined Advanced Applications*	**Project (Number/Name)** 333 / *Combined Advanced Applications*

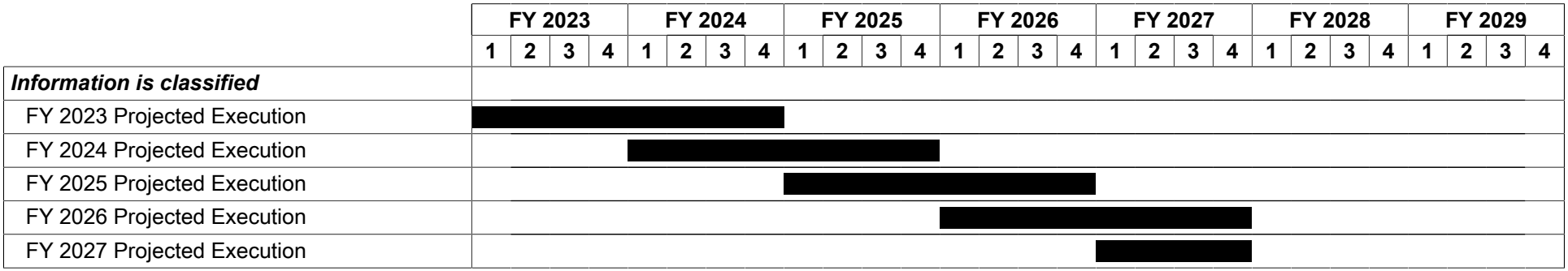


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305172D8Z / *Combined Advanced Applications*	**Project (Number/Name)** 333 / *Combined Advanced Applications*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Information is classified				
FY 2023 Projected Execution	1	2023	4	2024
FY 2024 Projected Execution	1	2024	4	2025
FY 2025 Projected Execution	1	2025	4	2026
FY 2026 Projected Execution	1	2026	4	2027
FY 2027 Projected Execution	1	2027	4	2027

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305186D8Z / *Policy R&D Programs*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	59.376	10.231	6.263	6.220	-	6.220	6.230	6.237	6.370	6.497	-	-
186: *Policy R&D Programs*	59.376	10.231	6.263	6.220	-	6.220	6.230	6.237	6.370	6.497	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland, and Deter Aggression.

The Policy R&D Program supports the National Defense Strategy by providing analysis to overcome military security challenges. Since the global environment is dynamic, research is necessary for continued understanding of military structures, foreign cultures, and ethnic issues. This program examines demographic data, investigates future global security challenges, provides insights to inform critical national security decisions, explores ways to build partnership capabilities to counter organizational warfare, develops foreign military infrastructure, and denies sanctuary to extremist groups. This program blends several disciplines including surveillance, operations, policy, information management, cyber policy, training and technology.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	10.231	6.263	6.220	-	6.220
Current President's Budget	10.231	6.263	6.220	-	6.220
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.000	-			
• SBIR/STTR Transfer	-	-			

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 186: *Policy R&D Programs*		
Congressional Add: *Policy Research and Development Programs*	3.000	-
Congressional Add Subtotals for Project: 186	3.000	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305186D8Z / *Policy R&D Programs*

Congressional Add Details ($ in Millions, and Includes General Reductions)

	FY 2023	FY 2024
Congressional Add Totals for all Projects	3.000	-

Change Summary Explanation

No change in FY 2025.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0305186D8Z / *Policy R&D Programs*	Project (Number/Name) 186 / *Policy R&D Programs*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
186: *Policy R&D Programs*	59.376	10.231	6.263	6.220	-	6.220	6.230	6.237	6.370	6.497	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

Provides analysis to overcome military security challenges. Since the global environment is dynamic, research is necessary for continued understanding of military structures, foreign cultures, and ethnic issues. Examines demographic data, investigates future global security challenges, provides insights to inform critical national security decisions, explores ways to build partnership capabilities to counter organizational warfare, develops foreign military infrastructure, and denies sanctuary to extremist groups. This program blends several disciplines including surveillance, operations, policy, information management, cyber policy, training and technology.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Future Security Challenges	4.024	2.563	2.520
Description: Provides program management oversight and technical support to identify current and emerging future security challenges to the Department, and for international cooperation activities with Allies and international partners to confront these challenges. Anticipates exploitation of technology, including available and advanced capabilities, and work with the international commercial sector and academia concerning adversary's application of technology. Program explores processes and policy to integrate international capabilities across the spectrum of security challenges.			
FY 2024 Plans: Continue efforts to include: • The INDO-PACOM AOR remains an area with increased emphasis and the program will continue to perform trend analysis and developing mitigation options. • Develop opportunities to apply risk management methodologies to identified program areas. • Working with our international partners, develop net-centric enterprise technologies to remove international sharing barriers identified with maritime information, intelligence, and data being collected by DoD and foreign governments. • Research military competition among nations in the Far and Middle East and highlight potential capabilities and policies each nation may utilize in future armed conflicts. • Continue to enhance strategies and relationships with European nations based on the exchange of information through education opportunities and existing policies. • Research and analyze particular Far (China) and Middle East countries as it relates to their decision-making process, financial position, leadership, political dynamics, technical abilities and internal social tensions and stability.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305186D8Z / *Policy R&D Programs*	**Project (Number/Name)** 186 / *Policy R&D Programs*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
• Continue research efforts within the Services and Combatant Commands to better analyze and demonstrate enduring counterinsurgency operational capabilities. ***FY 2025 Plans:*** Continue FY 2024 efforts to include: • The INDO-PACOM AOR remains an area with increased emphasis and the program will continue to perform trend analysis and developing mitigation options. • Develop opportunities to apply risk management methodologies to identified program areas. • Working with our international partners, develop net-centric enterprise technologies to remove international sharing barriers identified with maritime information, intelligence, and data being collected by DoD and foreign governments. • Research military competition among nations in the Far and Middle East and highlight potential capabilities and policies each nation may utilize in future armed conflicts. • Continue to enhance strategies and relationships with European nations based on the exchange of information through education opportunities and existing policies. • Research and analyze particular Far (China) and Middle East countries as it relates to their decision-making process, financial position, leadership, political dynamics, technical abilities and internal social tensions and stability. • Continue research efforts within the Services and Combatant Commands to better analyze and demonstrate enduring counterinsurgency operational capabilities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease will be offset by reduced overhead expenses.			
Title: Long Term Competitions (LTC) Program	2.507	3.000	3.000
Description: Request supports the Long Term Competitions (LTC) program which is an analytical effort chartered to provide the DoD senior leadership with an understanding of key long-term developments and dynamics in specific areas of the global security environment, and to develop competitive strategies for their consideration as the Department seeks to address these long term challenges. The LTC Program will provide rigorously analyzed competitive strategy recommendations to these senior DoD leaders, and will require the support of organizations and experts outside of government to deliver the highest quality analysis, concepts and recommendations. Funding for the LTC program will be used to: bring outside experts into Task Force working groups and strategy review teams; contract studies; support wargaming and workshops; conduct analytical studies of key developments and dynamics, and their impact on the future security environment and U.S. military capabilities in that environment; and explore new approaches to addressing key analytical requirements. Assessments of the ability of future forces to achieve objectives at the campaign level. These assessments include wargaming, qualitative, and quantitative analytic methods. They will both inform and be informed by the Support for Strategic Analysis (SSA)			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305186D8Z / *Policy R&D Programs*	**Project (Number/Name)** 186 / *Policy R&D Programs*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
defense planning scenarios (DPS). They will identify risk and potential trade-space among force structure, capabilities, and readiness to inform senior leader decision-making. ***FY 2024 Plans:*** Specific efforts are classified. ***FY 2025 Plans:*** Specific efforts are classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change in FY 2025.			
Title: Defense Planning Scenarios Activities ***Description:*** This program is classified. ***FY 2024 Plans:*** Specific efforts are classified. ***FY 2025 Plans:*** Specific efforts are classified. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change in FY 2025.	0.700	0.700	0.700
Accomplishments/Planned Programs Subtotals	7.231	6.263	6.220

	FY 2023	FY 2024
Congressional Add: Policy Research and Development Programs	3.000	-
FY 2023 Accomplishments: Supports off-shore wind energy research and development in coordination with OUSD(R&E). Funds were reprogrammed to OUSD(R&E) to fund the research and development.		
Congressional Adds Subtotals	3.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305186D8Z / *Policy R&D Programs*	**Project (Number/Name)** 186 / *Policy R&D Programs*

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0305186D8Z / *Policy R&D Programs*	Project (Number/Name) 186 / *Policy R&D Programs*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Policy R&D Programs	Various	National Defense Univ, FFRDCs : Various	59.376	10.231		6.263		6.220		-		6.220	Continuing	Continuing	N/A
		Subtotal	59.376	10.231		6.263		6.220		-		6.220	Continuing	Continuing	N/A

Remarks

The Policy R&D Program provides analysis to overcome military challenges and for continued understanding of military structures, foreign cultures and ethnic issues.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	59.376	10.231		6.263		6.220		-		6.220	Continuing	Continuing	N/A

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305186D8Z / *Policy R&D Programs*	**Project (Number/Name)** 186 / *Policy R&D Programs*

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
The Policy R&D Program provides analysis to overcome military challenges and for continued understanding of military structures, foreign cultures and ethnic issues																												
Policy R&D Program																												

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305186D8Z / *Policy R&D Programs*	**Project (Number/Name)** 186 / *Policy R&D Programs*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
The Policy R&D Program provides analysis to overcome military challenges and for continued understanding of military structures, foreign cultures and ethnic issues				
Policy R&D Program	1	2023	4	2029

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305199D8Z / *Net Centricity*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	164.169	16.827	23.275	20.620	0.000	20.620	19.258	19.162	19.565	19.956	Continuing	Continuing
199: *GIG Evaluation Facilities (GIG-EF) and GIG Enterprise-Wide Systems Engineering Advisory Activities*	164.169	16.827	23.275	20.620	0.000	20.620	19.258	19.162	19.565	19.956	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to deter aggression, defend the homeland, and build sustainable and long-term advantage.

DoD CIO provides strategic direction, policy guidance, and oversight that enables the Department to effectively research, define, prioritize, acquire, field, and sustain command, control, and communications (C3) capabilities in support of DoD operations and the warfighter. Specific C3 disciplines include: tactical (space, aerial, terrestrial, and maritime) communications and datalinks; communications infrastructure; satellite communications (SATCOM), including SATCOM terminals and gateways; electromagnetic spectrum (EMS) enterprise capabilities, infrastructure, and architectures; positioning, navigation, and timing (PNT); Defense Information Systems Network (DISN) infrastructure; commercial mobile devices (CMD); and emerging fifth generation (5G) and mobile capabilities.

The C3 modernization (C3M) program provides technical analysis, systems engineering, and capability oversight necessary to provide warfighters information advantage through organic and partnered C3 systems and capabilities, including weapon systems and platforms. This program comprehensively assesses critical information systems from initial design through capability development. C3M shapes a significant portion of the Combined Joint All Domain Command and Control (CJADC2) technology foundation by aligning the DoD's C3 information technology (IT) investments on the DoD's Digital Modernization Strategy (DMS).

These funds provide the capability to research, conduct technical analyses and assessments, evaluate, manage and deconflict an increasingly contested and congested spectrum environment through ground, air, and space communication networks. These capabilities include the ability to provide secure information access and services (e.g., cryptographic modernization management plan). The program supports the Department's CJADC2 efforts by refining joint protocols.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305199D8Z / *Net Centricity*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	17.192	23.275	20.620	-	20.620
Current President's Budget	16.827	23.275	20.620	-	20.620
Total Adjustments	-0.365	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.365	-			

Change Summary Explanation

The decrease from FY 2024 to FY 2025 is due to completing the Nimble Fire joint integrated air and missile defense (IAMD) modeling and simulation (M&S) efforts. The Department committed to funding two Nimble Fire events in FY 2024 only, which include planning, integration, blue system testing, and data analysis. The M&S efforts focused on future, integrated non-kinetic and kinetic fires, and multi-domain IAMD operational utility across the joint force. In addition, DoD CIO will complete sustainable spectrum access M&S efforts, including spectrum research, technical analyses and assessments, and validating Federal Aviation Administration (FAA)/National Telecommunications and Information Administration (NTIA) model and mode S identification friend or foe (IFF) implementation metrics.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Net Centricity Plans and Accomplishments	16.827	23.275	20.620	-	20.620
Description: Same as program level mission description. ***FY 2024 Plans:*** – Re-charter the SATCOM Systems Engineering Group, co-chaired by the Under Secretary of Defense for Acquisition and Sustainment and U.S. Space Force, and new focus on requirements and planning, programming, budgeting, and execution synchronization. – Initiate the Enterprise SATCOM Management and Control Implementation Plan, with initial focus on integrated data management and resource allocation automation. – Implement the automated DoD SATCOM terminal registry and resource allocation capabilities. – Continue rationalizing current SATCOM tools (SATCOM database management tool and Joint SATCOM management environment) to the SATCOM Operational Management and Situational Awareness Tool and migration to the Joint Warfighting Cloud Capability environment.					

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305199D8Z / *Net Centricity*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
– Continue governance and oversee modernized modem fielding (enterprise SATCOM gateway modem Army, Air Force antijam modem. – Continue Mobile User Objective System terminal oversight to keep fielding on schedule, in accordance with the Chairman of the Joint Chiefs of Staff-defined net transition strategy. – Continue efforts to formalize ground infrastructure sharing in Geraldton, AUS and work with other partners (UK, NZ, CAN) on prospective non-geosynchronous teleport partner locations. – Continue developing (MTS-CDD) to define ground infrastructure requirements. – Continue supporting the broadband SATCOM force design and follow-on analysis. – Continue technical analysis and identify modern transmission security mitigation controls to improve DoD's next-generation commercial SATCOM utilization. – Continue evolving SATCOM networks toward a digital intermediate frequency (IF) modem architecture. – Continue SATCOM International Standards Committee analysis. – Finalize remaining North Atlantic Treaty Organization (NATO) SATCOM extremely high frequency sites' initial operational capability and conduct NATO SATCOM services 6th generation reinvestment boards to allocate invoiced payments to deserving SATCOM projects. – Continue supporting allied and coalition interoperability efforts, including NATO migration plan, Joint Strike Fighter partner interoperability, US/Swedish master information exchange agreement, and integrating US and foreign C3 systems. – Continue analyzing multinational information sharing programs and initiatives, related acquisition strategies, and functional requirements. – Continue video dissemination and two-way global broadcast service support to inform follow-on DoD implementation. – Continue implementing SATCOM gateway optimization and resiliency and broadband force design initiatives. – Continue broadband and narrowband SATCOM force designs support and follow-on analysis. – Continue hub-based high frequency communications concept to provide protected high-rate communications needed for long range connectivity in satellite-denied environments. – Continue implementing SATCOM gateway optimization and resiliency and broadband force design initiatives. – Continue broadband and narrowband SATCOM force designs support and follow-on analysis. – Continue tactical processing nodes system engineering and architecture analysis. – Continue analyzing tactical secure voice cryptographic interoperability specification implementation on tactical radios. – Continue efforts to determine strengths, weaknesses, and waveform and network management capability uses; identify gaps; and identify new technologies to support waveform and network management.					

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305199D8Z / *Net Centricity*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
– Continue technical assessments/refine commercial wireless policy guidance to support DMS implementation; continue assessing cybersecurity policies effects. – Continue wireless architecture and advanced technologies analysis to inform Department-wide policies and implement mobility solutions. – Continue technical analysis to oversee waveform policies and technical specifications compliance. – Continue DoD commercial mobility implementation and systems engineering analysis on defense mobile unclassified and classified capabilities (DMUC/DMCC). – Continue analysis to support DMUC derived credentials implementation. – Continue refining CMD certification processes, mobile application/device management guidelines, DoD mobile public key infrastructure (PKI) guides, and personal user-based enforcement guidelines; update approved CMD product matrix. – Continue implementation assessments to refine mobile application and device strategies. – Develop an analytical model that facilitates rapid, safe, and operationally adequate access to the 1030/1090 MHz spectrum. – Develop a resilient, secure, and adaptive tactical IT infrastructure that can operate in a contested, congested, and operationally limited EMS environment. – Develop EMS statistical and associative M&S techniques. – Modernize DoD's spectrum dependent systems to a fully integrated information and decision support architecture for all-domain maneuver and fires superiority. – Modernize spectrum data, data collection, databases, storage retrieval, and aggregation. – Develop artificial intelligence-enabled spectrum data analytics. – Modernize electromagnetic battle management, situational awareness, and command and control (C2) integration. – Continue 5G analysis and develop policy to enable dynamic, bidirectional, and cognitive spectrum sharing. – Continue analysis and policy guidance on DoD tactical 5G technology use. – Develop 5G standards engagement plan. – Continue CMD and voice encryption technical and business case analyses. – Update the tactical radio and communication security modernization plan. – Continue developing interoperable land mobile radio (LMR) standards to support public safety communications. – Continue LMR policy implementation analysis; refine procedures to support DoD's LMR implementation. – Continue DoD waveform development and management analysis. – Maintain DoD-approved waveform baseline and authoritative repository.					

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305199D8Z / *Net Centricity*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
– Continue technical analysis to secure intelligence, surveillance, and reconnaissance (ISR) data and encryption over wireless platforms; conduct implementation assessments through unmanned aircraft systems encryption data calls. – Lead the narrowband communications services analysis of alternatives (AoA) working group, focusing on ground infrastructure, user terminals, and cost baselines. – Continue analyzing coalition C2 and multinational information sharing, functional requirements, strategic policy development, and capability strategies to guide mission partner environment (MPE) development. – Continue analyzing select joint and military service C2 programs/initiatives to promote enterprise data and services. – Continue common mission network transport capability implementation analysis. – Continue analyzing coalition C2 and multinational information sharing, functional requirements, strategic policy development, and capability strategies to guide mission partner environment (MPE) development. – Continue analyzing select joint and military service C2 programs/initiatives to promote enterprise data and services. – Continue common mission network transport capability implementation analysis. – Continue adopting and evolving enterprise mission services to support the DMS and joint communications architecture. – Conduct follow-on analysis to implement the Global Command and Control System AoA recommendations. – Continue joint force capability needs analysis to enable C2. – Evaluate enterprise operations center architectures and information requirements to support C2 investment decisions. – Continue joint C3 requirements, capability gaps, and integrated priority list analysis to support DoD CIO engagement in C3 functional capability boards. – Continue analyzing network management interoperability, architecture, and data artifacts. – Continue technical analysis to support the network management strategy and roadmap implementation. – Continue developing data ontologies and National Information Exchange Model compliant network management information exchange package documents. – Continue technical analysis supporting C3 policies, plans, studies, roadmaps, and capability assessments. – Continue studies and analyses supporting mobile device security efforts. – Continue technical analysis/studies on migrating current applications and services to DoD core data centers and support application rationalization. – Continue technical analysis to support DMS implementation capability upgrades and technical planning. – Continue studies and analyses on DMS technical implementation actions.					

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305199D8Z / *Net Centricity*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
– Continue technical analyses and studies related to software defined networking as an approach to network normalization and security. – Continue Link 16 joint interoperability enhancement progress analysis and add variable message format. – Assess developing waveform technologies to improve tactical data link network robustness and scalability. – Continue efforts to maintain DMS infrastructure framework and synchronization roadmap to track infrastructure deployment or implementation. – Continue reviewing DMS objectives, plans, technical approaches, schedules, and cost factors to support CJADC2 implementation. – Support business case development activities, as required. – Develop guidance (e.g., information system security engineering guidance) and programming recommendations to integrate trusted systems, networks, concepts, and processes into the acquisition and maintenance of DoD information systems, enclaves, and services, including tactical communication commodities purchase and integration. – Review/refine Electronic Flight Bag procedures. ***FY 2025 Base Plans:*** – Continue base program initiatives from prior budget year. – Continue implementing the DoD Enterprise Mass Warning & Notification system and modernize Next Generation 9-1-1. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease from FY 2024 to FY 2025 is due to completing the Nimble Fire joint IAMD M&S efforts. The Department committed to funding two Nimble Fire events in FY 2024 only, which include planning, integration, blue system testing, and data analysis. The M&S efforts focused on future, integrated non-kinetic and kinetic fires, and multi-domain IAMD operational utility across the joint force. In addition, DoD CIO will complete sustainable spectrum access M&S efforts, including spectrum research, technical analyses and assessments, and validating FAA/NTIA model and mode S IFF implementation metrics.					
Accomplishments/Planned Programs Subtotals	16.827	23.275	20.620	-	20.620

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305199D8Z / *Net Centricity*

E. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305199D8Z / *Net Centricity*	**Project (Number/Name)** 199 / *GIG Evaluation Facilities (GIG-EF) and GIG Enterprise-Wide Systems Engineering Advisory Activities*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analysis	Various	Various : Various	29.565	0.128	Mar 2023	0.146	Mar 2024	0.786	Mar 2025	0.000	Mar 2025	0.786	Continuing	Continuing	Continuing
Technical Engineering Services	Various	Various : Various	58.982	9.503	Jul 2023	10.129	Mar 2024	7.000	Mar 2025	0.000	Mar 2025	7.000	Continuing	Continuing	Continuing
		Subtotal	88.547	9.631		10.275		7.786		0.000		7.786	Continuing	Continuing	N/A

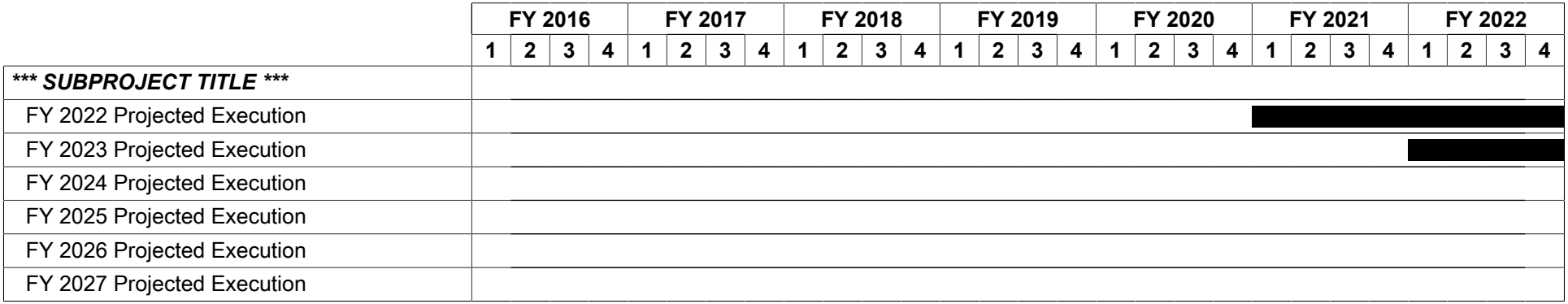
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	34.926	-		5.000	Mar 2024	5.000	Mar 2025	0.000	Mar 2025	5.000	Continuing	Continuing	Continuing
Program Support	FFRDC	Various : Various	2.869	-		-		-		-		-	-	-	-
Engineering Support	FFRDC	Various : Various	29.493	7.196	Mar 2023	8.000	Mar 2024	7.834	Mar 2025	-		7.834	Continuing	Continuing	Continuing
R&D Support	Various	Various : Various	8.334	-		-		-		-		-	-	-	-
		Subtotal	75.622	7.196		13.000		12.834		0.000		12.834	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	164.169	16.827		23.275		20.620		0.000		20.620	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305199D8Z / *Net Centricity*	**Project (Number/Name)** 199 / *GIG Evaluation Facilities (GIG-EF) and GIG Enterprise-Wide Systems Engineering Advisory Activities*



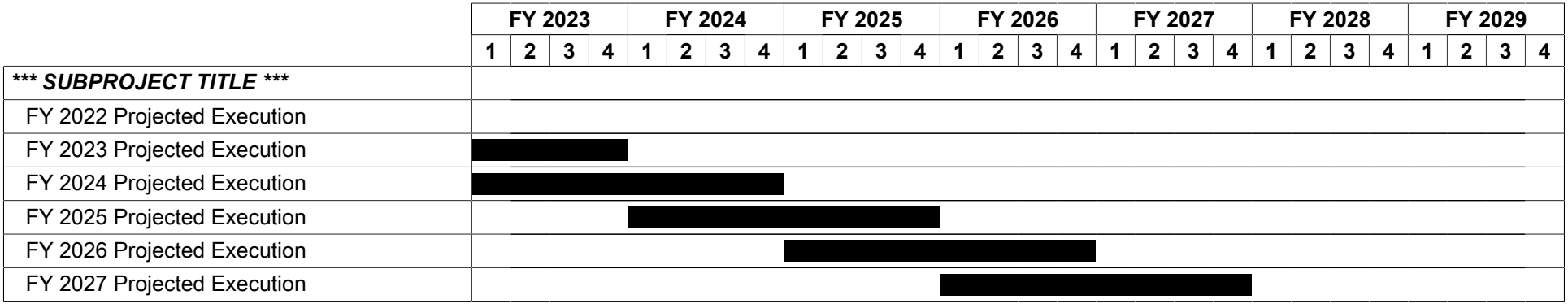


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305199D8Z / *Net Centricity*	**Project (Number/Name)** 199 / *GIG Evaluation Facilities (GIG-EF) and GIG Enterprise-Wide Systems Engineering Advisory Activities*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
****** SUBPROJECT TITLE ******				
FY 2022 Projected Execution	1	2021	4	2022
FY 2023 Projected Execution	1	2022	4	2023
FY 2024 Projected Execution	1	2023	4	2024
FY 2025 Projected Execution	1	2024	4	2025
FY 2026 Projected Execution	1	2025	4	2026
FY 2027 Projected Execution	1	2026	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305245D8Z / *Intelligence Capabilities and Innovation Investments*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	4.575	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.575
245: *Intelligence Capabilities & Innovation Investments*	0.000	4.575	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.575

Note

New Start (Y/N): No

Starting in FY 2024 funding is reflected in BA4.

A. Mission Description and Budget Item Justification

Classified program.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	4.575	0.000	0.000	-	0.000
Current President's Budget	4.575	0.000	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

FY 2025 funding is reflected in BA 04.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0305245D8Z / *Intelligence Capabilities and Innovation Investments*	Project (Number/Name) 245 / *Intelligence Capabilities & Innovation Investments*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
245: *Intelligence Capabilities & Innovation Investments*	0.000	4.575	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.575
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Classified

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Intelligence Capabilities & Innovation Investments ***Description:*** Classified	4.575	-	-
Accomplishments/Planned Programs Subtotals	4.575	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The contracting strategy follows guidance outlined in the DoD 5000 series directives, Federal Acquisition Regulation (FAR), and Defense Federal Acquisition Regulation (DFAR).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305245D8Z / *Intelligence Capabilities and Innovation Investments*	**Project (Number/Name)** 245 / *Intelligence Capabilities & Innovation Investments*

Remarks

Classified

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305245D8Z / *Intelligence Capabilities and Innovation Investments*	**Project (Number/Name)** 245 / *Intelligence Capabilities & Innovation Investments*

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Intelligence Capabilities & Innovation Investments																												
Intelligence Capabilities and Innovation Investments	[redacted]																											

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305245D8Z / *Intelligence Capabilities and Innovation Investments*	**Project (Number/Name)** 245 / *Intelligence Capabilities & Innovation Investments*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Intelligence Capabilities & Innovation Investments				
Intelligence Capabilities and Innovation Investments	1	2023	4	2023

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305387D8Z / *Homeland Defense Technology Transfer Program*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	27.160	1.732	1.879	1.867	-	1.867	1.868	1.870	1.910	1.948	-	-
387: *Homeland Defense Technology Transfer Program*	27.160	1.732	1.879	1.867	-	1.867	1.868	1.870	1.910	1.948	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland, Build Sustainable and Long-Term Advantage, and Taking Care of People.

The Homeland Defense Technology Transfer program ensures a successful and balanced transfer of dual-use technology equipment and information to first responders without impeding military readiness. Accelerates dual-use tech transfer to first responders, increases effectiveness of equipment transfers to first responders, and transfers technology through a transitional effort that has dual utility to improve homeland security and enhance public safety without degrading military readiness. The program meets the Congressional intent of Sec 1401 of the National Defense Authorization Act for FY 2003 (P.L. 107-314) and supports the National Defense Strategy through continuously delivering performance with affordability and speed as we change Departmental mindset, culture, and management systems.

The program consolidates and coordinates various military endeavors that pass technology and equipment to first responders. Works with a variety of DoD activities, interagency partners, and first responder organizations to ensure that dual-use military technology is expedited into the commercial sector for use by law enforcement, fire, and emergency medical service personnel. Works with the Military Departments and Defense Logistics Agency to ensure that appropriate excess military equipment is made available to the first responder community on an expedited basis. Fulfills Congressional intent to help improve public safety and enhance public security.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305387D8Z / *Homeland Defense Technology Transfer Program*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	1.864	1.879	1.867	-	1.867
Current President's Budget	1.732	1.879	1.867	-	1.867
Total Adjustments	-0.132	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.100	-			
• SBIR/STTR Transfer	-0.032	-			

Change Summary Explanation

No change in FY 2025 from previous PB.
Minimal programmatic adjustments from FY 2024 to FY 2025 to support a successful and balanced transfer of dual-use technology equipment and information to first responders without impeding military readiness.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Homeland Defense Technology Transfer Program	1.732	1.879	1.867
Description: Provide outreach through coordination and cooperation with inter-agency partners to provide dual-use technology and equipment to first responders. Ensure DoD components conduct Technology Transfer programs that are appropriate for the respective component. Provide information to stakeholders on equipment and technology use and availability.			
FY 2024 Plans: Continue efforts in support of the first responder community. - Use a consortium of subject matter experts/governance councils to prioritize technology transfer requirements and expedite DoD dual-use technologies. - Continue program outreach activities and prioritize outreach to reflect efficiencies. - Enhance and expedite excess equipment transfer capabilities from service level divestiture efforts and overseas contingency operations.			
FY 2025 Plans: Continue FY 2024 efforts in support of the first responder community. - Use a consortium of subject matter experts/governance councils to prioritize technology transfer requirements and expedite DoD dual-use technologies. - Continue program outreach activities and prioritize outreach to reflect efficiencies.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305387D8Z / *Homeland Defense Technology Transfer Program*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Enhance and expedite excess equipment transfer capabilities from service level divestiture efforts and overseas contingency operations. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 slight decrease will support a successful and balanced transfer of dual-use technology equipment and information to first responders without impeding military readiness.			
Accomplishments/Planned Programs Subtotals	1.732	1.879	1.867

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0305387D8Z / *Homeland Defense Technology Transfer Program*	Project (Number/Name) 387 / *Homeland Defense Technology Transfer Program*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Homeland Defense Transfer of Dual-use Technology Equipment	MIPR	Navy Commands : SPAWAR, NSWC, ONR	27.160	1.732		1.879		1.867		-		1.867	Continuing	Continuing	-
		Subtotal	27.160	1.732		1.879		1.867		-		1.867	Continuing	Continuing	N/A

Remarks

N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	27.160	1.732		1.879		1.867		-		1.867	Continuing	Continuing	N/A

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305387D8Z / *Homeland Defense Technology Transfer Program*	**Project (Number/Name)** 387 / *Homeland Defense Technology Transfer Program*

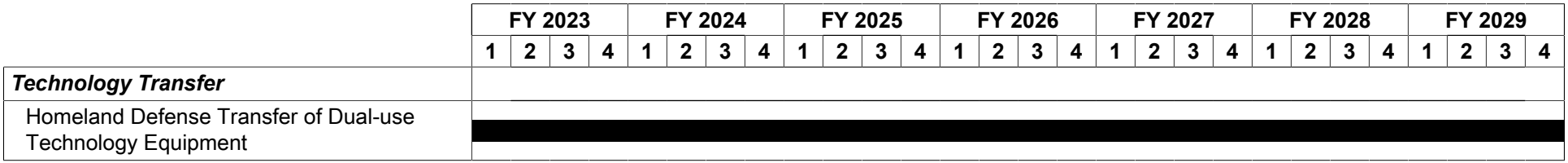

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0305387D8Z / *Homeland Defense Technology Transfer Program*	**Project (Number/Name)** 387 / *Homeland Defense Technology Transfer Program*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Technology Transfer				
Homeland Defense Transfer of Dual-use Technology Equipment	1	2023	4	2029

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Prepare Against WMD*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	1.760	-	-	-	-	-	-	-	Continuing	Continuing
785: *Domestic Prepare Against WMD*	0.000	0.000	1.760	-	-	-	-	-	-	-	Continuing	Continuing

Note

New Start (Y/N): No

Following FY 2024 the PE name "Domestic Prepare Against WMD" changed to "Radiological and Nuclear Defense Modernization Operational System Development" and the PE number changed from 0505167D8Z to 0607757D8Z to more accurately reflect the prescribed purpose of the Program Element.

A. Mission Description and Budget Item Justification

As a FY 2024 new start, this program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence and being prepared to prevail, and Build Sustainable and Long-Term Advantage.

The Radiological and Nuclear (R/N) Detection Gear Modernization and Procurement for the Joint Force research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: improving the Department's capability to survive and operate in the Radiological and Nuclear environment – including in the information and early warning domain; reinforcing our own warfighting advantages by providing increased capability to detect and identify radiological and nuclear threats; and enhancing our interoperability and access to address acute forms of coercion. This program is specifically geared to provide modern improved networked R/N detection, indications and identification capability to the warfighter and to upgrade obsolete equipment and increase capability to continue to operate in the R/N environment (2022 National Defense Strategy and the 2023 CWMD Strategy).

RDAs provide enhanced R/N capabilities. The Radiological and Nuclear Defense Capability Development portfolio enables DoD to provide Joint Force and National Guard capability development, acquisition and modernization funding to prepare for and respond to any emergency involving nuclear and/or radiological events in the United States; provide a capability for the Joint Force to withstand, operate through, and recover from an R/N event and will ensure DoD strategic direction aligns with the National Defense Strategy's priorities; is a necessary action to improve resilience; and promotes integrated deterrence of WMD with state, local and other federal agencies. This funding line is the only BA7 funding in the Department dedicated to providing improved R/N capability to the warfighter.

The Radiological and Nuclear Defense Capability Development portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices.

The Office of the Secretary of Defense uses the Radiological and Nuclear Defense Capability Development portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment

strategy is used to meet emergent operational and capability needs validated by the Joint Force and the National Guard Bureau, yielding new fielded capabilities within one to two years.

The Radiological and Nuclear Defense Capability Development portfolio: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to fielded capabilities that improve capability to detect and identify radiological and nuclear threats. This program bridges the gap between basic research to accelerate and enable transition of technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry.

This program funds labor, materials, and travel to support the requirements of this program, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	1.760	0.000	-	0.000
Current President's Budget	0.000	1.760	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

Following FY 2024 the PE name "Domestic Prepare Against WMD" changed to "Radiological and Nuclear Defense Modernization Operational System Development" and the PE number changed from 0505167D8Z to 0607757D8Z to more accurately reflect the prescribed purpose of the Program Element.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0505167D8Z / *Domestic Prepare Against WMD*	Project (Number/Name) 785 / *Domestic Prepare Against WMD*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
785: *Domestic Prepare Against WMD*	0.000	0.000	1.760	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Following FY 2024 the PE name "Domestic Prepare Against WMD" changed to "Radiological and Nuclear Defense Modernization Operational System Development" and the PE number changed from 0505167D8Z to 0607757D8Z to more accurately reflect the prescribed purpose of the Program Element.

A. Mission Description and Budget Item Justification

As a FY 2024 new start, this program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence and being prepared to prevail, and Build Sustainable and Long-Term Advantage.

The Radiological and Nuclear (R/N) Detection Gear Modernization and Procurement for the Joint Force research and development activities (RDAs) enhance DoD's capabilities to campaign across the domains of threats and spectrums of conflict by: improving the Department's capability to survive and operate in the Radiological and Nuclear environment – including in the information and early warning domain; reinforcing our own warfighting advantages by providing increased capability to detect and identify radiological and nuclear threats; and enhancing our interoperability and access to address acute forms of coercion. This program is specifically geared to provide modern improved networked R/N detection, indications and identification capability to the warfighter and to upgrade obsolete equipment and increase capability to continue to operate in the R/N environment (2022 National Defense Strategy and the 2023 CWMD Strategy).

RDAs provide enhanced R/N capabilities. The Radiological and Nuclear Defense Capability Development portfolio enables DoD to provide Joint Force and National Guard capability development, acquisition and modernization funding to prepare for and respond to any emergency involving nuclear and/or radiological events in the United States; provide a capability for the Joint Force to withstand, operate through, and recover from an R/N event and will ensure DoD strategic direction aligns with the National Defense Strategy's priorities; is a necessary action to improve resilience; and promotes integrated deterrence of WMD with state, local and other federal agencies. This funding line is the only BA7 funding in the Department dedicated to providing improved R/N capability to the warfighter.

The Radiological and Nuclear Defense Capability Development portfolio is executing along cohesive lines of effort (LOEs) designed to prepare the Joint Force for a Future Operating Environment in which adversary pursuit or possession of WMDs pose threats ranging from existential to tactical, and limit U.S. strategic choices.

The Office of the Secretary of Defense uses the Radiological and Nuclear Defense Capability Development portfolio to invest strategically in projects across the Military Services, Combatant Commands, and Defense Agencies. Funding is prioritized for projects that close Joint Force warfighter capability gaps. An annual investment strategy is used to meet emergent operational and capability needs validated by the Joint Force and the National Guard Bureau, yielding new fielded capabilities within one to two years.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Prepare Against WMD*	**Project (Number/Name)** 785 / *Domestic Prepare Against WMD*

The Radiological and Nuclear Defense Capability Development portfolio: Systems Development and Demonstration program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to fielded capabilities that improve capability to detect and identify radiological and nuclear threats. This program bridges the gap between basic research to accelerate and enable transition of technologies to fielded capabilities by leveraging significant science and technology (S&T) investments made by the Department of Defense, other Federal agencies, and industry.

This program funds labor, materials, and travel to support the requirements of this program, performed by a government agency or by private individuals or organizations under a contract with the government, for activities and acquisitions including RDT&E, assessments and analyses, research studies, education, and other activities related to capability development and fielding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Radiological and Nuclear Defense Modernization Operational Systems Dev	-	1.760	-
Description: The Radiological and Nuclear Defense Capability Modernization: Systems Development program invests in maturation of prototypes; integration of technologies, systems and components; developmental and operational test and evaluation; and transition to R/N Defense fielded capabilities. Significant S&T investments in prototype development by the Department of Defense, other Federal agencies, and industry are leveraged, capitalizing on mature technologies to accelerate and enable transition to fielded capabilities. Resulting fielded capabilities protect the warfighter, support indications and early warning, command and control, defend vulnerabilities in networks, programs, facilities, and weapons systems; and enable the disablement or defeat of WMD and their delivery systems. ***FY 2024 Plans:*** • Develop, transition, and field operational R/N Detection, Identification, Early warning, and Command Control capabilities to the Joint Force and the National Guard Bureau. • Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities. • Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified projects. • Continue development of Joint Personnel Dosimeter on behalf of the Joint Force. • Continue development of Radiological Detection System on behalf of the Joint Force. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Following FY 2024 the PE name "Domestic Prepare Against WMD" changed to "Radiological and Nuclear Defense Modernization Operational System Development" and the PE number changed from 0505167D8Z to 0607757D8Z to more accurately reflect the prescribed purpose of the Program Element.			
Accomplishments/Planned Programs Subtotals	-	1.760	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Prepare Against WMD*	**Project (Number/Name)** 785 / *Domestic Prepare Against WMD*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Following FY 2024 the PE name "Domestic Prepare Against WMD" changed to "Radiological and Nuclear Defense Modernization Operational System Development" and the PE number changed from 0505167D8Z to 0607757D8Z to more accurately reflect the prescribed purpose of the Program Element.

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Prepare Against WMD*	**Project (Number/Name)** 785 / *Domestic Prepare Against WMD*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop, transition, and field operational R/N Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.	C/TBD	TBD : TBD	-	-		0.500	Apr 2024	-		-		-	Continuing	Continuing	-
Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities.	C/TBD	TBD : TBD	-	-		0.500	Apr 2024	-		-		-	Continuing	Continuing	-
Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified progr	C/TBD	TBD : TBD	-	-		0.760	Apr 2025	-		-		-	Continuing	Continuing	-
		Subtotal	-	-		1.760		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		1.760		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Prepare Against WMD*	**Project (Number/Name)** 785 / *Domestic Prepare Against WMD*

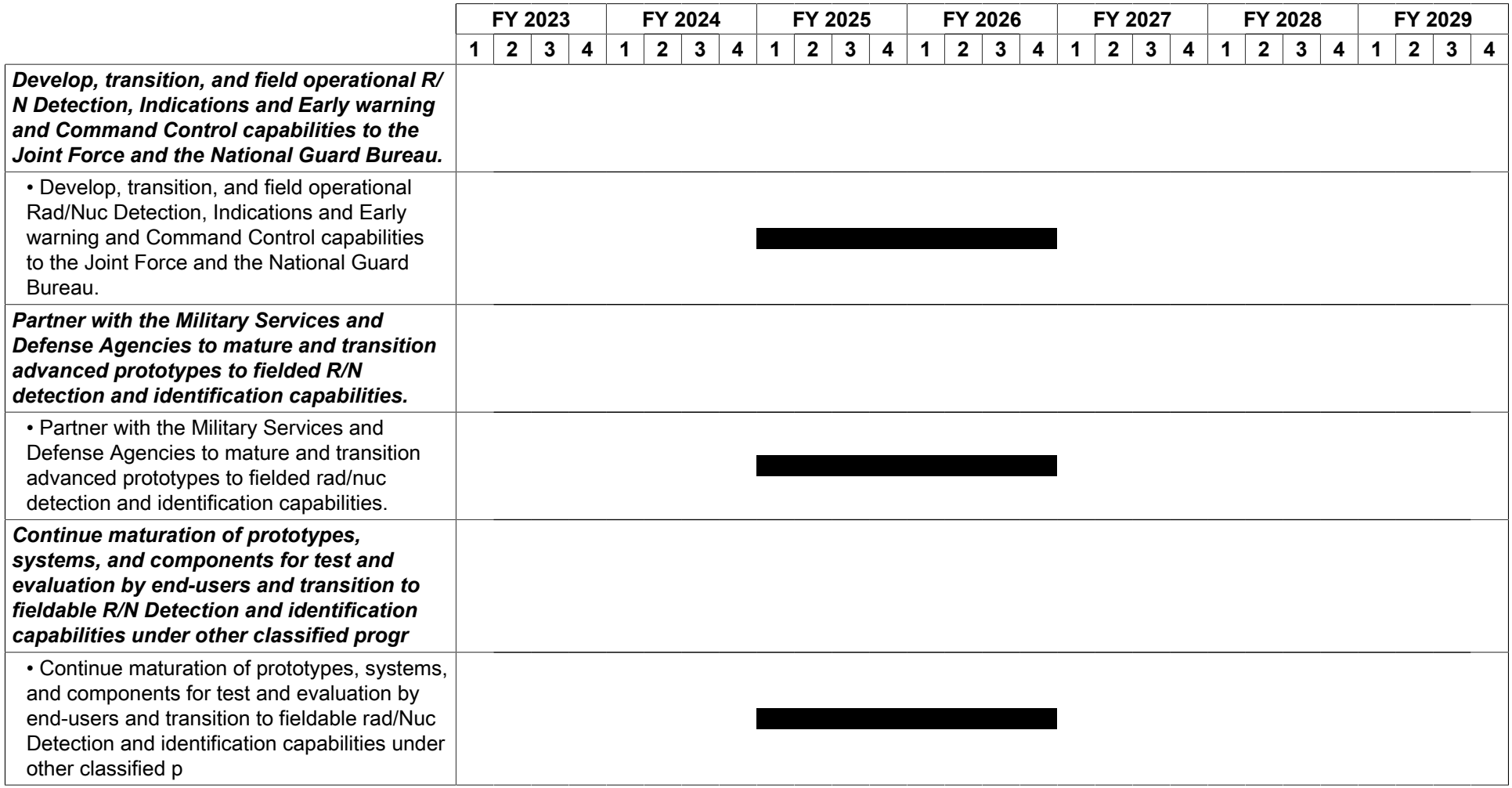

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0505167D8Z / *Domestic Prepare Against WMD*	**Project (Number/Name)** 785 / *Domestic Prepare Against WMD*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Develop, transition, and field operational R/N Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.				
• Develop, transition, and field operational Rad/Nuc Detection, Indications and Early warning and Command Control capabilities to the Joint Force and the National Guard Bureau.	1	2025	4	2026
Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded R/N detection and identification capabilities.				
• Partner with the Military Services and Defense Agencies to mature and transition advanced prototypes to fielded rad/nuc detection and identification capabilities.	1	2025	4	2026
Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable R/N Detection and identification capabilities under other classified progr				
• Continue maturation of prototypes, systems, and components for test and evaluation by end-users and transition to fieldable rad/Nuc Detection and identification capabilities under other classified p	1	2025	4	2026

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 8: *Software and Digital Technology Pilot Programs*	**R-1 Program Element (Number/Name)** PE 0608648D8Z / *Acquisition Visibility - Software Pilot Program*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	33.757	15.055	21.355	17.907	-	17.907	17.829	17.768	18.056	17.582	Continuing	Continuing
059: *Acquisition Visibility*	33.757	15.055	21.355	17.907	-	17.907	17.829	17.768	18.056	17.582	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

The Acquisition Visibility (AV) investment funds an agile software program to deliver the Department's authoritative acquisition data through NIPR and SIPR instances of the Defense Acquisition Visibility Environment (DAVE), provide data access and standards via the Acquisition Visibility Data Framework (AVDF), and accelerate the retirement of costly legacy systems. AV is an authoritative source for acquisition data inside the DoD and for Congress, GAO, and the Inspectors General for multiple Adaptive Acquisition Framework (AAF) Acquisition Pathways including all Acquisition Category (ACAT) I – IV programs, Middle Tier of Acquisition programs, as well as National Command, Control, and Communications covered programs. Planned efforts include support to the acquisition data strategy requirements of Section 836 of the National Defense Authorization Act (NDAA) for FY 2021 and data collection and sharing for additional AAF Pathways, and sustainment functions to include Defense Business Systems and Software Acquisition. Multiple acquisition data collection and analysis platforms rely on AV Capabilities for authoritative acquisition data, including but not limited to: OSD Comptroller Advanced Analytics (ADVANA), OSD Cost Analysis and Program Evaluation (CAPE) Cost Assessment Data Enterprise, Air Force and Army Project Management Reporting Tools, Navy Research, Development and Acquisition Information System, and the Earned Value Management Central Repository.

The Acquisition Visibility mission is expanding to enable integration and interoperability of acquisition, building an enduring strategic mission advantage by aligning the Department's processes to design, develop, and deliver the acquisition data and analytics capabilities to enable USD(A&S) to meet the Digital Acquisition & Sustainment and Transparency objectives of the Department and the requirements of Congress. Comprehensive digital acquisition, analytics, and increased data transparency and access will improve acquisition decisions, enable sophisticated analysis, and inform innovative ways of doing business so that OUSD(A&S), the OSD staff, and the Services and Components can quickly inform policy and budget decisions with accurate, authoritative data. The budget implements Section 836 of the NDAA for FY 2021 and Sections 805 and 821 of the NDAA for FY 2022 to modernize acquisition decision-making and Section 809 of the NDAA for FY 2023 additional direction for the replacement of the selected acquisition reporting system.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 8: *Software and Digital Technology Pilot Programs*	**R-1 Program Element (Number/Name)** PE 0608648D8Z / *Acquisition Visibility - Software Pilot Program*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	15.758	21.355	18.885	-	18.885
Current President's Budget	15.055	21.355	17.907	-	17.907
Total Adjustments	-0.703	0.000	-0.978	-	-0.978
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.126	-			
• SBIR/STTR Transfer	-0.577	-			
• Defense-Wide Topline Adjustment	0.000	0.000	-0.978	-	-0.978

Change Summary Explanation

FY 2025 decrease due to transfer of funds to PE 0605649D8Z Acquisition Integration and Interoperability for better program visibility.

The FY 2025 change supports the investment in acquisition data governance and data analytics capabilities required to enable acquisition integration and interoperability, including:

o Data Transparency: Govern acquisition and sustainment data to manage the timely sharing of consumable data to support NDS and statutory A&S requirements, including Modernized Selected Acquisition Reports, the DepSecDef Management Action Group, Interim Program Reviews, Integrated Acquisition Portfolio Reviews, and Department-wide initiatives supported through Advana.

o Data Capture & Sharing: Expand existing acquisition data capabilities, tools, data models, data access, and definitions to enhance transparency across all acquisition pathways and Component acquisition and sustainment data activities.

o Data Analytics: Respond to strategic questions across OUSD(A&S) to fulfill enterprise data requirements and develop analytic product applications to provide timely and accurate data.

o Data Analysis: Promote the use of acquisition data analytics to inform policy and strategic decision-making including Defense Acquisition Executive Summary Reviews of Major Capabilities, IAPRs, and Services Requirements Review Boards.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 8	R-1 Program Element (Number/Name) PE 0608648D8Z / *Acquisition Visibility - Software Pilot Program*	Project (Number/Name) 059 / *Acquisition Visibility*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
059: *Acquisition Visibility*	33.757	15.055	21.355	17.907	-	17.907	17.829	17.768	18.056	17.582	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The AV investment funds an agile software program to deliver the Department's authoritative acquisition data through NIPR and SIPR instances of the Defense Acquisition Visibility Environment (DAVE), provide data access and standards via the Acquisition Visibility Data Framework (AVDF), and accelerate the retirement of costly legacy systems. AV is an authoritative source for acquisition data inside the DoD and for Congress, GAO, and the Inspectors General for multiple Acquisition Pathways including all Acquisition Category (ACAT) I – IV programs and Middle Tier of Acquisition programs. Planned efforts include support to the acquisition data strategy requirements of Section 836 of the NDAA for FY 2021 and data collection and sharing for additional Acquisition Pathways, to include Defense Business Systems and Software Acquisition, as well as expanded data collection for Major Capability Acquisition in accordance with Section 805 of the FY 2022 NDAA directing a review of the Selected Acquisition Reporting requirement. Multiple acquisition data collection and analysis platforms rely on AV Capabilities for authoritative acquisition data, including but not limited to: OSD Comptroller Advanced Analytics (ADVANA), OSD Cost Analysis and Program Evaluation (CAPE) Cost Assessment Data Enterprise, Air Force and Army Project Management Reporting Tools, Navy Research, Development and Acquisition Information System, and the Earned Value Management Central Repository.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Acquisition Visibility Operation & Maintenance Efforts	7.968	8.156	7.819
Description: Acquisition Visibility delivers authoritative, reliable acquisition data to enable statutory reporting, executive decision making, and portfolio insight on over $2 trillion in lifecycle funding across approximately 100 active ACAT I programs, as well as approximately 1,000 Acquisition Category (ACAT) II, III, and IV programs, National Command, Control, and Communications covered programs, and 120 Middle Tier of Acquisition (MTA) programs.			
FY 2024 Plans: • Sustain and perform minor enhancements of the DAVE system, the authoritative source for acquisition data • Align data collection to law and policy for the Acquisition Pathways • Provide acquisition data analyses and visualizations. • Maintain the Acquisition Information Repository. • Align the Acquisition Visibility Data Framework to reflect evolving Acquisition Pathway data requirements.			
FY 2025 Plans: Deploy a centralized data and analytics function that has a single strategic enterprise-wide approach to data management and analytics to service the whole of Acquisition and Sustainment. Maximize the use of acquisition data for analysis, analytics and			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 8	**R-1 Program Element (Number/Name)** PE 0608648D8Z / *Acquisition Visibility - Software Pilot Program*	**Project (Number/Name)** 059 / *Acquisition Visibility*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
decision making to drive competitive advantage and improve mission outcomes. Align the Acquisition Visibility Data Framework to reflect evolving Acquisition Pathway data requirements, as well as updates or changes to other acquisition data use cases. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 increase of $0.163 million is due to fact-of-life contract cost increases.			
Title: Acquisition Visibility RDT&E Efforts ***Description:*** As a BA-08 program, Acquisition Visibility's RDT&E-related investments develop and enhance software capabilities to enhance program and portfolio insight of the Department's acquisition programs for the Defense Acquisition Executive (DAE), Component Acquisition Executives (CAEs), Service Chiefs of Staff, Office of the Secretary of Defense (OSD) senior leaders, and OSD and Component analysts. The Defense Acquisition Visibility Environment (DAVE) is an authoritative source for acquisition data inside the DoD and for the Congress, GAO, and the Inspectors General for multiple Adaptive Acquisition Framework (AAF) Acquisition Pathways including all Acquisition Category (ACAT) I – IV programs, and Middle Tier of Acquisition programs with data for additional Acquisition Pathway data in requirements planning. ***FY 2024 Plans:*** • Manage features and capabilities for additional Acquisition Pathways. • Identify, define, and document new acquisition data elements to support integration and interoperability, and sustainment • Deliver additional data analyses and visualizations that enhance integration and interoperability. • Deliver a Digital/ Automated DAES Data Collection & Analysis Capability • Deliver new digital congressional and department wide data to support the DAE and statutory requirements • Expand the Acquisition Visibility Data Framework to reflect new use cases for defense exportability, protection of critical program information, and energy resilience ***FY 2025 Plans:*** • Identify analytic use cases and prepare customer needs statements to support new information requirements • Develop dashboards, visualizations, and reports for acquisition decisionmakers using data science tools • Deploy analytic products (apps) in Advana (or an approved Analytic Layer) for access by the end users • Track Acquisition pathway health/policy support • Manage OSD acquisition enterprise data platforms and share data to Advana (or an approved Analytic Layer) for access by the end users • Identify data requirements and align requirements to data standards and data sources • Expand the Acquisition Visibility Data Framework to fully reflect modernized Selected Acquisition Reporting IAW FY 2022 NDAA Section 805, defense security cooperation, and industrial base resilience ***FY 2024 to FY 2025 Increase/Decrease Statement:***	7.087	13.199	10.088

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 8	**R-1 Program Element (Number/Name)** PE 0608648D8Z / *Acquisition Visibility - Software Pilot Program*	**Project (Number/Name)** 059 / *Acquisition Visibility*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The FY 2024 to FY 2025 decrease is due to re-programming of funds from Acquisition Visibility to the Acquisition Integration and Interoperability program element 0605649D8Z. The FY 2024 Acquisition Visibility PE experienced a planned one-year increase in funding while the AI2 PE was being established. The decrease in FY 2025 does not represent a decrease in effort but rather a return to previous levels.			
Accomplishments/Planned Programs Subtotals	15.055	21.355	17.907

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Data management and analytics, and capability development and sustainment are acquired through a combination of competed small-disadvantaged and small business contracts employing agile software development methodologies.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 8	**R-1 Program Element (Number/Name)** PE 0608648D8Z / *Acquisition Visibility - Software Pilot Program*	**Project (Number/Name)** 059 / *Acquisition Visibility*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Visibility Operation & Maintenance Efforts	Option/ FFP	Contractor : Contractor Facility	11.424	7.968	Jun 2023	8.156	Jun 2024	7.819	Jun 2025	-		7.819	Continuing	Continuing	Continuing
Acquisition Visibility RDT&E Efforts	Option/ FFP	Contractor : Contractor Facility	22.333	7.087	Jun 2023	13.199	Jun 2024	10.088	Jun 2025	-		10.088	Continuing	Continuing	Continuing
		Subtotal	33.757	15.055		21.355		17.907		-		17.907	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33.757	15.055		21.355		17.907		-		17.907	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 8	**R-1 Program Element (Number/Name)** PE 0608648D8Z / *Acquisition Visibility - Software Pilot Program*	**Project (Number/Name)** 059 / *Acquisition Visibility*

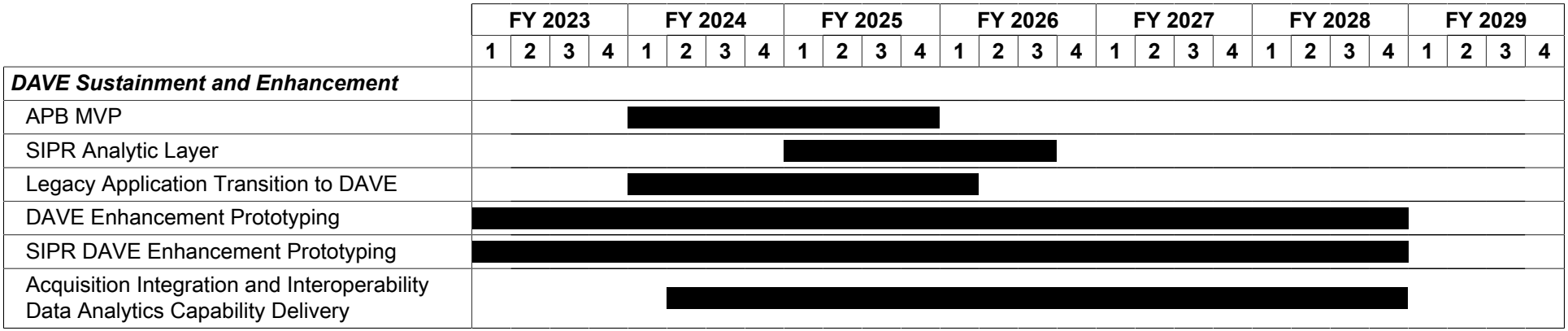

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 8	**R-1 Program Element (Number/Name)** PE 0608648D8Z / *Acquisition Visibility - Software Pilot Program*	**Project (Number/Name)** 059 / *Acquisition Visibility*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DAVE Sustainment and Enhancement				
APB MVP	1	2024	4	2025
SIPR Analytic Layer	1	2025	3	2026
Legacy Application Transition to DAVE	1	2024	1	2026
DAVE Enhancement Prototyping	1	2023	4	2028
SIPR DAVE Enhancement Prototyping	1	2023	4	2028
Acquisition Integration and Interoperability Data Analytics Capability Delivery	2	2024	4	2028