Department of Defense
Fiscal Year (FY) 2025 Budget Estimates

March 2024

Operational Test and Evaluation, Defense

Defense-Wide Justification Book Volume 5 of 5

Operational Test and Evaluation, Defense

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Table of Volumes

Volume 5 Table of Contents

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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
Operational Test and Evaluation, Defense	446,122	446,122	348,709
Total Research, Development, Test, & Evaluation	**446,122**	**446,122**	**348,709**

*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			
Management Support	446,122	331,489	348,709
Undistributed		114,633	
Total Research, Development, Test, & Evaluation	**446,122**	**446,122**	**348,709**
Summary Recap of FYDP Programs			
Research and Development	446,122	331,489	348,709
Administration and Associated Activities		114,633	
Total Research, Development, Test, & Evaluation	**446,122**	**446,122**	**348,709**

*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.

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			
Management Support	446,122	331,489	348,709
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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: 0460D Operational Test and Evaluation, Defense

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
1	0605118OTE	Operational Test and Evaluation	06	U	133,579	169,544	136,226
2	0605131OTE	Live Fire Test and Evaluation	06	U	167,953	103,252	109,561
3	0605814OTE	Operational Test Activities and Analyses	06	U	144,590	58,693	102,922
	Management Support				**446,122**	**331,489**	**348,709**
4	0901560OTE	Continuing Resolution Programs	20	U		114,633	
	Undistributed					**114,633**	
Total Operational Test and Evaluation, Defense					**446,122**	**446,122**	**348,709**

*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.

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

Appropriation 0460: Operational Test and Evaluation, Defense

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Operational Test and Evaluation, Defense	Date: March 2024
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*

COST ($ in Millions)	Prior Years	FY 2023	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	218.527	133.579	169.544	136.226	-	136.226	137.281	137.812	140.701	143.250	Continuing	Continuing
000310: *OTE*	218.527	133.579	169.544	136.226	-	136.226	137.281	137.812	140.701	143.250	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Office of the Director, Operational Test and Evaluation (DOT&E) was created by Congress in 1983. The Director is prescribed, by authority of the Secretary of Defense, policies and procedures for the conduct of operational test and evaluation (OT&E) in the Department of Defense (DoD). The Director provides guidance to and consults with the Secretary of Defense, the Under Secretary of Defense for Acquisition and Sustainment, and the Under Secretary of Defense for Research and Engineering, and the Service Secretaries with respect to OT&E. DOT&E's oversight list fluctuates, but generally has around 235 programs, including Major Defense Acquisition Programs (MDAP) and programs from across each of the six adaptive acquisition pathways.

Programs identified as MDAPs for the purposes of test and evaluation may not proceed beyond low-rate initial production (BLRIP) until OT&E of the program is complete. DOT&E is involved early in the planning phase of each program to ensure adequate testing is planned and executed. Key elements of DOT&E's oversight authority include:

- Approval of component Test and Evaluation Master Plans (TEMPs).
- Approval of component OT&E test plans (TPs).
- Oversight of military department preparation for and conduct of field operational tests; analysis and evaluation of the resultant test data; the assessment of the adequacy of the executed test and evaluation; and assessment of the operational effectiveness, suitability, and survivability of the defense business and weapon systems.
- Reporting results of OT&E that support BLRIP decisions to the Secretary of Defense and Congress, and providing an annual report summarizing all OT&E activities and the adequacy of test resources within the DoD during the previous fiscal year.
- Review of DoD budgets and financial matters related to OT&E, and recommendations to the Secretary of Defense on all matters relating to operational test facilities and equipment.

DOT&E also oversees and resources OT&E community efforts to plan and execute joint cybersecurity assessments of fielded systems and networks during major combatant command (CCMD) and Service exercises, and reports the trends and findings in the annual report. DOT&E is also involved in assessing and increasing the capacity of realistically advanced cyber warfighting capabilities to keep pace with heightened demand, advancing technologies, and the growing cyber threat. DOT&E funded cyber assessments provide assistance for the remediation of mission-critical vulnerabilities as rapidly as possible.

This Program Element includes funds to obtain Federally Funded Research and Development Center (FFRDC) support in performing the described tasks, travel funds to carry out oversight of the OT&E and cyber assessment programs, funds for Service teams performing information assurance and interoperability assessments during exercises, administrative support services, DFAS support, and engineering and technical support services.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Operational Test and Evaluation, Defense	Date: March 2024
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	118.579	169.544	182.195	-	182.195
Current President's Budget	133.579	169.544	136.226	-	136.226
Total Adjustments	15.000	0.000	-45.969	-	-45.969
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	15.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Transfer out: Funding from R-1 PE 0605118OTE to 0605814OTE	-	-	-43.445	-	-43.445
• Transfer out: Funding from R-1 PE 0605118OTE to 0605131OTE	-	-	-2.524	-	-2.524

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 000310: *OTE*		
Congressional Add: *Browser plug-in security research*	5.000	-
Congressional Add: *Red Team Automation*	10.000	-
Congressional Add Subtotals for Project: 000310	15.000	-
Congressional Add Totals for all Projects	15.000	-

Change Summary Explanation

Transfer of funds from R-1 Program Element 0605118OTE to 0605131OTE ($2.524M) and 0605814OTE ($43.445M) for the better alignment of resource execution, and continuing efforts from prior year Congressional adds in test capability acceleration for areas of direct energy, hypersonic, space systems, targets, artificial intelligence/autonomous systems, and data management innovations.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense			Date: March 2024
Appropriation/Budget Activity 0460 / 6	R-1 Program Element (Number/Name) PE 0605118OTE / *Operational Test and Evaluation (OT&E)*	Project (Number/Name) 000310 / *OTE*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
000310: *OTE*	218.527	133.579	169.544	136.226	-	136.226	137.281	137.812	140.701	143.250	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Office of the Director, Operational Test and Evaluation (DOT&E) was created by Congress in 1983. The Director is prescribed, by authority of the Secretary of Defense, policies and procedures for the conduct of operational test and evaluation (OT&E) in the Department of Defense (DoD). The Director provides guidance to and consults with the Secretary of Defense, the Under Secretary of Defense for Acquisition and Sustainment, and the Under Secretary of Defense for Research and Engineering, and the Service Secretaries with respect to OT&E. DOT&E's oversight list fluctuates, but generally has around 235 programs, including Major Defense Acquisition Programs (MDAP) and programs from across each of the six adaptive acquisition pathways.

Programs identified as MDAPs for the purposes of test and evaluation may not proceed beyond low-rate initial production (BLRIP) until OT&E of the program is complete. DOT&E is involved early in the planning phase of each program to ensure adequate testing is planned and executed. Key elements of DOT&E's oversight authority include:

- Approval of component Test and Evaluation Master Plans (TEMPs).
- Approval of component OT&E test plans (TPs).
- Oversight of military department preparation for and conduct of field operational tests; analysis and evaluation of the resultant test data; the assessment of the adequacy of the executed test and evaluation; and assessment of the operational effectiveness, suitability, and survivability of the defense business and weapon systems.
- Reporting results of OT&E that support BLRIP decisions to the Secretary of Defense and Congress, and providing an annual report summarizing all OT&E activities and the adequacy of test resources within the DoD during the previous fiscal year.
- Review of DoD budgets and financial matters related to OT&E, and recommendations to the Secretary of Defense on all matters relating to operational test facilities and equipment.

DOT&E also oversees and resources OT&E community efforts to plan and execute joint cybersecurity assessments of fielded systems and networks during major combatant command (CCMD) and Service exercises, and reports the trends and findings in the annual report. DOT&E is also involved in assessing and increasing the capacity of realistically advanced cyber warfighting capabilities to keep pace with heightened demand, advancing technologies, and the growing cyber threat. DOT&E funded cyber assessments provide assistance for the remediation of mission-critical vulnerabilities as rapidly as possible.

This Program Element includes funds to obtain Federally Funded Research and Development Center (FFRDC) support in performing the described tasks, travel funds to carry out oversight of the OT&E and cyber assessment programs, funds for Service teams performing information assurance and interoperability assessments during exercises, administrative support services, DFAS support, and engineering and technical support services.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*	**Project (Number/Name)** 000310 / *OTE*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Operational Test and Evaluation (OT&E)	118.579	169.544	136.226

Description: OT&E Oversight
This effort is in direct support of the Director's Title 10 responsibilities and is a continuing effort. Funding for FY 2024 and FY 2025 provides OT&E inputs for TEMPs, TPs, and System Acquisition Reports for those programs designated for oversight by DOT&E. The key elements are identified in the DoD instructions and manuals signed by the DOT&E and the Under Secretary of Defense for Research & Engineering. This also includes funding for congressionally mandated test and evaluation (T&E) oversight of all Middle Tier of Acquisition programs and programs utilizing other accelerated acquisition authorities. This includes the development of independent T&E concepts for such programs; review of programs' T&E strategies; observation of relevant test events to ensure compliance with TPs; independent data analysis; and development of reports to the Secretary of Defense and Congress on all matters related to test adequacy and demonstrated operational effectiveness, suitability, and survivability of the defense business and weapon systems.

Cyber Assessment
DOT&E also oversees and resources OT&E community efforts to plan and execute joint operational evaluations of information assurance (cyber survivability) and interoperability of fielded systems and networks during major CCMD and Service exercises. DOT&E reports the mission-focused trends and findings in the annual report, and provides a mission risk assessment each fiscal year. DOT&E also supports efforts to increase the capacity for assessments of advanced cyber warfighting capabilities to keep pace with heightened demand for those capabilities, advancing technologies, and the growing cyber threat. DOT&E-funded cyber assessments provide assistance for the remediation of mission-critical vulnerabilities as rapidly as possible.

FY 2024 Plans:
OT&E Oversight
DOT&E plans to provide operational and/or live fire test and evaluation oversight for over 250 acquisition programs at various stages in their acquisition cycle. DOT&E must make plans to annually review and approve dozens of Test and Evaluation Master Plans (TEMPs), as well as T&E strategy reviews, concepts, training modules, to include many other congressional requested reports and memorandums. Funding for oversight also includes travel costs for the DOT&E workforce to be present at live fire events and to be integrated with the various service acquisition and weapon system capability events. To stay at the forefront of the T&E enterprise and leading contributor to advancement in the T&E community, the Director and staff must attend many conferences, trainings, and working group functions to stay informed on leading practices, develop improved testing methodologies, and implement lessons learned through updates to T&E policy and guidance to meet the T&E and acquisition demands of today and tomorrow. Current efforts include, among others, improved cybersecurity testing, software spectrum operations, modeling and simulation validation, and efficient test methodologies.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*	**Project (Number/Name)** 000310 / *OTE*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Cyber Assessment DOT&E plans to sponsor approximately 60 CCMD and Service cybersecurity assessments and CRC events in FY 2024. Each assessment will continue to include “Find-Fix-Verify” efforts to facilitate the remediation of identified vulnerabilities and verify that solutions and mitigations improve warfighter mission assurance. DOT&E plans to continue working with the CCMDs and Services to develop multiyear plans for exercise cyber assessments and Cyber Readiness Campaign (CRC) events. These plans will focus on assessing the CCMD’s or Service’s ability to complete missions and be resilient in a cyber-contested environment. DOT&E will perform year-round and long-duration assessments of all CCMDs and Services with Global Persistent Cyber Operations (PCO) authorities. DOT&E will continue assessing artificial intelligence (AI) and Machine-Learning technologies for cybersecurity as they are deployed to CCMDs, for their contribution to mission accomplishment, and their potential increase of the cyberattack surface. DOT&E will sponsor the acquisition of Red Team tools and tradecraft for these focused assessments. Objectives for DOT&E assessments in FY 2024 include improving portrayal of advanced cyber and electronic-warfare threats during exercises and the assessment of operational missions during realistic attacks. Expanded table-top exercises and wargames to stress senior-leader decisions with advanced threats not suitable for operational exercises will also be performed. DOT&E will assess Cyber Protection Teams and Cyber Mission Teams when they participate during PCO, CRC, or exercise events. DOT&E will continue focused assessments in mission and technology areas that are receiving extensive upgrades or becoming more prevalent in warfighter systems, including offensive cyber operations capabilities; Nuclear Command, Control, and Communications (NC3); commercial clouds; Joint Fires Networks; AI and machine-learning technologies, and non-internet protocol platforms. DOT&E will transmit critical findings to Congress and DoD leadership along with recommended actions to improve DoD’s cybersecurity posture.			
FY 2025 Plans: OT&E Oversight DOT&E plans to continue to provide operational and/or live fire test and evaluation oversight for over 230+ acquisition programs at various stages in their acquisition cycle. DOT&E plans to continue to meet the Title 10 responsibilities of oversight of the department’s continued acquisition and modernizations efforts, support to the services Combatant Commands (CCMDs), to the T&E enterprise and community, and continue to support the department on policy and modernization efforts to the T&E community and enterprise. Cyber Assessment DOT&E plans to sponsor approximately 70 CCMD and Service cyber assessment events in FY 2025. Each assessment will continue to include “Find-Fix-Verify” efforts to facilitate the remediation of identified vulnerabilities and verify that solutions and mitigations improve warfighter mission assurance. DOT&E plans to continue working with the CCMDs and Services to develop multiyear plans for exercise cyber assessments and CRC events. These plans will focus on assessing the CCMD’s or Service’s			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*	**Project (Number/Name)** 000310 / *OTE*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
ability to complete missions and be resilient in a cyber-contested and realistic electronic-warfare environment. DOT&E will contribute to Red Team enhancements to enable the emulation of advanced, full-spectrum threats by DoD Red Teams. DOT&E will perform year-round and long-duration assessments of all CCMDs and Services with Global PCO authorities. DOT&E will continue assessing Artificial Intelligence and machine-learning technologies for cybersecurity as they are deployed to CCMDs, and for their contribution to mission accomplishment and their potential increase of the cyber-attack surface. DOT&E will continue focused assessments in mission and technology areas that are receiving extensive upgrades or becoming more prevalent in warfighter systems, including offensive cyber operations capabilities, NC3, commercial clouds, Joint Fires Networks, AI and machine-learning technologies, and non-internet protocol platforms. DOT&E will transmit critical findings to Congress and DoD leadership along with recommended actions to improve DoD's cybersecurity posture. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease reflects a transfer of funds from R-1 Program Element 0605118OTE to 0605131OTE ($2.524M) and 0605814OTE ($43.445M) for the better alignment of resource execution, and continuing efforts from prior year Congressional adds in test capability acceleration for areas of direct energy, hypersonic, space systems, targets, artificial intelligence/autonomous systems, and data management innovations.			
Accomplishments/Planned Programs Subtotals	118.579	169.544	136.226

	FY 2023	FY 2024
Congressional Add: Browser plug-in security research	5.000	-
FY 2023 Accomplishments: Congressional add funding supported continued development of cybersecurity research for defense browser plug-in capabilities. DOT&E sponsored approximately 50 CCMD and Service cyber assessments and CRC events in FY 2023. Each assessment included "Find-Fix-Verify" efforts to facilitate the remediation of identified vulnerabilities and verify that solutions and mitigations improve warfighter mission assurance. As is customary, most DOT&E assessments found existing problems or vulnerabilities that could impact critical DOD missions, and assessment reporting raised these issues to leadership who could direct remediation efforts. Examples of such results for FY 2023 include findings regarding Zero Trust, credential management and compromise, unencrypted communications used by military aircraft, and multiple network cybersecurity issues brought to light during warfighter mission-rehearsal exercises. In most of these cases, DOD leadership responded rapidly and effectively to remedy identified problems.		
Congressional Add: Red Team Automation	10.000	-
FY 2023 Accomplishments: DOT&E performed a survey of national labs, FFRDCs, academic organizations, Red Teams, and commercial organizations to identify available tools that could enhance current red team		

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*	**Project (Number/Name)** 000310 / *OTE*

	FY 2023	FY 2024
operations. The survey also requested identification of capabilities that are in development, and which could be available in the next 12 months, capabilities that could assist red teams in assessments of AI-enabled technologies, and AI-enablers that could enhance red team tools and tradecraft. Capabilities that show promise in these three categories will be assessed during range and lab demonstrations in the first and second quarter of FY 2024, and acquisition decisions will be made following completion of an over-arching assessment of available capabilities. Deployment of automation enhancements to red teams should begin during the second quarter of FY 2024, and more advanced capabilities and AI-enablers should follow in the third and fourth quarters of FY 2024.		
Congressional Adds Subtotals	15.000	-

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 Operational Test and Evaluation, Defense	Date: March 2024
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*

COST ($ in Millions)	Prior Years	FY 2023	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	177.597	167.953	103.252	109.561	-	109.561	109.183	107.744	110.152	112.621	Continuing	Continuing
000311: *LFT&E*	177.597	167.953	103.252	109.561	-	109.561	109.183	107.744	110.152	112.621	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element consists of three programs: Joint Live Fire (JLF), Joint Aircraft Survivability Program (JASP), and Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME).

This Program Element directly supports the Congressional statutory requirements for oversight of LFT&E. The primary objective of LFT&E is to assure that the vulnerability and survivability of Department of Defense (DoD) crew-carrying platforms and the lethality of our conventional munitions are known and acceptable before entering full-rate production. LFT&E encompasses realistic tests involving actual U.S. and foreign threat hardware or, if not available, acceptable surrogate threat hardware. The objective is to identify and correct design deficiencies early in the development process. A completed LFT&E program and test report is required before programs proceed beyond low-rate initial production (BLRIP). LFT&E also includes realistic modeling and simulation (M&S) to examine survivability and lethality attributes not assessed during testing.

This Program Element supports the DoD's JLF Program, initiated in 1984 under an Office of the Secretary of Defense charter to test fielded front-line combat aircraft and armor systems for their vulnerabilities as well as fielded weapons, both U.S. and foreign, for their lethality against their respective targets. Funds are also used to support other initiatives related to quick reaction requests from theater and other areas of personnel survivability. Through its evolution, the JLF program also facilitates the development of adequate LFT&E tools, methods, and infrastructure required for credible development of both, Joint Munitions Effectiveness Manuals (JMEM) weaponeering tools and LFT&E programs.

JASP is the DoD's focal point for joint service enhancement of military aircraft non-nuclear survivability. The JASP is chartered by the Commander of the U.S. Navy Naval Air Systems Command, the Assistant Secretary of the Army (Acquisition, Logistics, and Technology), and the Commander of the U.S. Air Force Life Cycle Management Center to increase the affordability, readiness, and effectiveness of tri-Service aircraft through joint coordination and development of survivability technologies, design tools, and assessment methodologies. The JASP coordinates and conducts RDT&E to improve military aircraft survivability, develop and standardize aircraft survivability M&S, facilitate information exchange on aircraft survivability, and support aircraft survivability education for the DoD and U.S. aircraft community. Each chartering command provides a senior aircraft survivability expert for the JASP Principal Members Steering Group, which guides the program and approves projects for funding. The JASP assesses and reports on combat damage incidents through the Joint Combat Assessment Team (JCAT).

JTCG/ME was chartered to serve as DoD's focal point for munitions effectiveness information. The JTCG/ME produces Joint Munitions Effectiveness Manuals (JMEMs) that are the sole source for all joint Service authenticated non-nuclear weapons effectiveness data and methodology for the DoD. The JMEMs are the "how to" manuals for putting ordnance on target and as such, directly impacts combat readiness, effectiveness, and survivability. JMEMs are used by the warfighters in operational weaponeering and collateral damage estimation (CDE) calls in direct support of operations, mission planning, and training; by the DoD, joint, and Service planners in force-on-force M&S, mission area analysis, requirements studies, and weapon procurement planning; and by the Service acquisition community in performance

assessment, analysis of alternatives, and survivability enhancement studies. The JTCG/ME continually evolves weapons effectiveness and target vulnerability data, standards, methodologies, and processes based on the strategic environment for better munitions effectiveness evaluation and support to a more lethal force. JTCG/ME also increases efficiency by leveraging ongoing DoD efforts and supporting the DoD's intent to complement U.S. interest and capabilities by providing weaponeering and targeting capability to coalition partners.

The JMEM requirements and development processes are driven by operational lessons learned (e.g., Inherent Resolve, Resolute Support, and Freedom Sentinel); Joint Staff data calls, and the needs of combatant commands (CCMDs), the Services, the Military Targeting Committee (MTC) guided by Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 5140.01, Munitions Requirements Process - DoD Instruction 3000.04 and Operational Users Working Groups (OUWGs) input for specific weapon-target pairings and methodologies. Considerable effort goes into these user forums to establish warfighter requirements for current and future JTCG/ME products, as well as continued training events and day-to-day support - all with the goal of enabling greater force lethality, strengthened partner capabilities, and optimal use of resources.

This Program Element also includes funds to obtain Federally Funded Research and Development Center (FFRDC) expertise in performing analyses in support of described LFT&E tasks, as well as travel funds to carry out the JLF, JASP, and JTCG/ME programs.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	98.753	103.252	107.037	-	107.037
Current President's Budget	167.953	103.252	109.561	-	109.561
Total Adjustments	69.200	0.000	2.524	-	2.524
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	69.200	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Transfer in: Funding from R-1 PE 0605118OTE to 0605131OTE	-	-	2.524	-	2.524

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 000311: *LFT&E*		
Congressional Add: *Program Increase: Test Capabilities Acceleration - Electromagnetic Spectrum*	41.000	-
Congressional Add: *Program Increase: Test Capabilities Acceleration - Hypersonics*	10.000	-
Congressional Add: *Program Increase: Test Capabilities Acceleration - Space Systems*	15.000	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Operational Test and Evaluation, Defense	Date: March 2024
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605131OTE *I Live Fire Test and Evaluation (LFT&E)*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Program Increase: Test Capabilities Acceleration - Data Management*	3.200	-
Congressional Add Subtotals for Project: 000311	69.200	-
Congressional Add Totals for all Projects	69.200	-

Change Summary Explanation

Transfer of funds from R-1 Program Element 0605118OTE to 0605131OTE ($2.524M) for the better alignment of resource execution, and continuing efforts from prior year Congressional adds in test capability acceleration for areas of electromagnetic spectrum, hypersonic, space systems, and data management innovations.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense			Date: March 2024
Appropriation/Budget Activity 0460 / 6	R-1 Program Element (Number/Name) PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	Project (Number/Name) 000311 / *LFT&E*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
000311: *LFT&E*	177.597	167.953	103.252	109.561	-	109.561	109.183	107.744	110.152	112.621	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Program Element consists of three programs: Joint Live Fire (JLF), Joint Aircraft Survivability Program (JASP), and Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME).

This Program Element directly supports the Congressional statutory requirements for oversight of LFT&E. The primary objective of LFT&E is to assure that the vulnerability and survivability of Department of Defense (DoD) crew-carrying platforms and the lethality of our conventional munitions are known and acceptable before entering full-rate production. LFT&E encompasses realistic tests involving actual U.S. and foreign threat hardware or, if not available, acceptable surrogate threat hardware. The objective is to identify and correct design deficiencies early in the development process. A completed LFT&E program and test report is required before programs proceed beyond low-rate initial production (BLRIP). LFT&E also includes realistic modeling and simulation (M&S) to examine survivability and lethality attributes not assessed during testing.

This Program Element supports the DoD's JLF Program, initiated in 1984 under an Office of the Secretary of Defense charter to test fielded front-line combat aircraft and armor systems for their vulnerabilities as well as fielded weapons, both U.S. and foreign, for their lethality against their respective targets. Funds are also used to support other initiatives related to quick reaction requests from theater and other areas of personnel survivability. Through its evolution, the JLF program also facilitates the development of adequate LFT&E tools, methods, and infrastructure required for credible development of both, Joint Munitions Effectiveness Manuals (JMEM) weaponeering tools and LFT&E programs.

JASP is the DoD's focal point for joint service enhancement of military aircraft non-nuclear survivability. The JASP is chartered by the Commander of the U.S. Navy Naval Air Systems Command, the Assistant Secretary of the Army (Acquisition, Logistics, and Technology), and the Commander of the U.S. Air Force Life Cycle Management Center to increase the affordability, readiness, and effectiveness of tri-Service aircraft through joint coordination and development of survivability technologies, design tools, and assessment methodologies. The JASP coordinates and conducts RDT&E to improve military aircraft survivability, develop and standardize aircraft survivability M&S, facilitate information exchange on aircraft survivability, and support aircraft survivability education for the DoD and U.S. aircraft community. Each chartering command provides a senior aircraft survivability expert for the JASP Principal Members Steering Group, which guides the program and approves projects for funding. The JASP assesses and reports on combat damage incidents through the Joint Combat Assessment Team (JCAT).

JTCG/ME was chartered to serve as DoD's focal point for munitions effectiveness information. The JTCG/ME produces Joint Munitions Effectiveness Manuals (JMEMs) that are the sole source for all joint Service authenticated non-nuclear weapons effectiveness data and methodology for the DoD. The JMEMs are the "how to" manuals for putting ordnance on target and as such, directly impacts combat readiness, effectiveness, and survivability. JMEMs are used by the warfighters in operational weaponeering and collateral damage estimation (CDE) calls in direct support of operations, mission planning, and training; by the DoD, joint, and Service planners in force-on-force M&S, mission area analysis, requirements studies, and weapon procurement planning; and by the Service acquisition community in performance

assessment, analysis of alternatives, and survivability enhancement studies. The JTCG/ME continually evolves weapons effectiveness and target vulnerability data, standards, methodologies, and processes based on the strategic environment for better munitions effectiveness evaluation and support to a more lethal force. JTCG/ME also increases efficiency by leveraging ongoing DoD efforts and supporting the DoD's intent to complement U.S. interest and capabilities by providing weaponeering and targeting capability to coalition partners.

The JMEM requirements and development processes are driven by operational lessons learned (e.g., Inherent Resolve, Resolute Support, and Freedom Sentinel); Joint Staff data calls, and the needs of combatant commands (CCMDs), the Services, the Military Targeting Committee (MTC) guided by Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 5140.01, Munitions Requirements Process - DoD Instruction 3000.04 and Operational Users Working Groups (OUWGs) input for specific weapon-target pairings and methodologies. Considerable effort goes into these user forums to establish warfighter requirements for current and future JTCG/ME products, as well as continued training events and day-to-day support - all with the goal of enabling greater force lethality, strengthened partner capabilities, and optimal use of resources.

This Program Element also includes funds to obtain Federally Funded Research and Development Center (FFRDC) expertise in performing analyses in support of described LFT&E tasks, as well as travel funds to carry out the JLF, JASP, and JTCG/ME programs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Live Fire Test and Evaluation	98.753	103.252	109.561
Description: LFT&E of Major DoD Acquisition Programs The FY 2025 request will enable DOT&E to assess the adequacy of LFT&E strategies/plans and generate new LFT&E policies to support systems' acquisitions and rapid fielding. The FY 2025 request will ensure adequate execution of the LFT&E plans and subsequent ability to conduct independent analysis of survivability and lethality tests, and M&S data in support of LFT&E reports to Congress. ***FY 2024 Plans:*** JLF The FY 2024 budget aligns with DOT&E's Science &Technology Strategic Plan/Update, National Defense Strategy (NDS) objectives, and the Secretary of Defense's priorities. It performs a critical role within the Survivability/Lethality Analytic Community by delivering infrastructure, models, simulations, and data to support testing and experimentation of kinetic/non-kinetic systems in operationally relevant contexts to inform, improve and act as a consistent foundation for LFT&E and Warfighter tools and techniques. The FY 2024 program focuses on advancing Survivability/Lethality evaluation through partnering with LFT&E community to advance the state of testing, coordinating with Program Offices to ensure projects contribute to weapons that work, and investing in efficiencies and improvements to save cost and speed delivery of systems. It concentrates on validated munitions effectiveness			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 000311 / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
modeling through testing informed by high fidelity codes to push our understanding of developing capabilities that produce verified and validated M&S informing acquisition and warfighter communities with consistent and credible results. Ultimately producing fast running-models based on empirical results, high fidelity modeling and analysis giving Warfighters the timely data their mission requires. Lastly, the program focuses on data initiatives that validate munition and target models supporting digital evaluations of performance, advance evaluation and effectiveness predictions through modern AI/ML techniques and deliver accredited data that forms the foundation of accuracy and credibility. Specifically, the FY 2024 program continues development of validated munitions effectiveness modeling techniques that use high fidelity M&S to inform test events which can be transitioned to fast running models to impact both Acquisition and Warfighter Advanced Target Development in the areas of advanced warhead characterization, aluminized high-explosive modeling, Electronic Warfare GPS denial validations tests, active protection system (APS) modeling, assessment of traumatic brain injuries (TBI), multi-hit kinetic penetration validation, Fast Air Target Encounter Penetration model improvements, and Navy HPM lethality testing. JLF will advance Survivability & Lethality evaluation through developing or contributing to state-of-art test equipment and processes for behind armor debris modernization, full ship shock trial instrumentation improvements, continued advancements in testing requirements for ballistic helmet protection, and increasing fidelity in blast experiments. JLF funds emerging projects that will push the boundaries on development, management, and delivery of effectiveness data for cyber automated threat discovery & vulnerability evaluation reinforcement, effectiveness as a service through probability of kill look ups through Machine Learning (ML) techniques hosted with Application Programming Interfaces, and ML regression on Advanced Joint Effectiveness Model (AJEM) effects data optimized through design-of-experiments. JASP In FY 2024, the JASP continues work on multi-year RDT&E projects and initiates new projects approved by the JASP Principal Members Steering Group and OSD/DOT&E. The JASP will support the NDS objectives to “Defend the Homeland” and “Prevail in Conflict” by developing measures to improve threat situational awareness, defeat adversary advanced radio frequency and infrared guided threats, and provide quantifiable improvements in digital and hardware-in-the-loop M&S capability and credibility. JASP continues to improve aircraft force protection by advancing system hardening against kinetic and non-kinetic threats. JASP will support the NDS objective to ‘Build a Resilient Joint Force’ by funding the development of more efficient capabilities to advance, test and evaluate aircraft survivability against kinetic and non-kinetic threats. The JCAT continues to support the Air Force, Army, Marine Corps, and Navy by assessing combat damage incidents, training operators on threat effects and combat damage assessment, and reporting their findings to combatant commanders and the			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 000311 / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
DoD science and technology and acquisition communities. The JASP continues supporting aircraft survivability education and information exchange through internet sites (restricted access and classified), by publishing the Aircraft Survivability Journal, developing educational materials, and conducting training for the DoD and their contractors. The JASP initiates, continues, and completes other projects as approved by the JASP Principal Members Steering Group and OSD/DOT&E. JTCG/ME JTCG/ME plans to field the Digital Imagery Exploitation Engine (DIEE) v3.0 and support the development of Joint Munitions Effectiveness Manuals (JMEMs) Weaponeering System (JWS) v3.0/DIEE v3.1 capabilities to support Advanced Target Development (ATD) (i.e., Weaponeering, Collateral Damage Effects, Target Coordinate Mensuration) at CCMD level in accordance with Joint Staff Policy. JTCG/ME development events will include Technical Previews (TPs) to finish JWS v3.0/DIEE v3.1 and transition to JWS v3.1/DIEE v3.2 capability development. JTCG/ME enhances its product development/security/operations (DevSecOps) pipelines and cybersecurity processes with refinement/expansion of processes and methods to include consolidated DevSecOps pipelines, improved requirement dashboards, Model Base System Engineering (MBSE), data ontologies, Cooperative Vulnerability and Penetration Assessments (CVPAs), and Adversarial Assessments (AA). These processes will allow flexibility and efficiencies in addressing secure multi-domain targeting strategy and solutions. JTCG/ME develops/accredits Collateral Effects Radii (CER) reference tables for current weapons inventory and in accordance with the latest CJCSI 3160.01, “No-Strike and the Collateral Damage Effects (CDE) Methodology” for air-to-surface and surface-to-surface weapons. JTCG/ME supports/hosts JMEM training sessions, External Interface Working Groups (EIWG), OUWGs, and user help desk. Support ~40+ training sessions with about 400+ students. There is expected increase in training due new JWS v3.1/DIEE v3.1 and J-ACE v6.0 fielding in FY24. JTCG/ME collects user requirements and product use cases, to support JMEM product development. JTCG/ME continues to support/deliver reach back analysis packages for collateral damage mitigation, post-forensic, and force protection analyses packages to operational users for high value targets in current operations. JTCG/ME facilitates coalition interoperability and Information Exchange Agreements (IEA) forums. JTCG/ME continues to support/deliver JWS version releases and standalone Probability of Kill Look Up Tables (PKLUTs) to multiple key coalition partners in support of current operations under Foreign Military Sales (FMS).			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 000311 / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
JTCG/ME enhances “The Bugle” (Program Confluence Board), Joint Effects Library (JEL) and Joint Analysis Repository and Visual Interface System (JARVIS) capabilities that serve as the foundation of product information to users, as well as Tri-service approved methodology and data. JTCG/ME plans to continue to support Enhanced Weaponeering and CDE Program improving weaponeering and CDE methodology. FY24 efforts will continue to foster coordination for gaps and priorities. Data from the multiple tests will be transitioned for enhancing, developing, and validating methodology used in JMEM products and T&E efforts. JTCG/ME continues the multi-year program intended to improved Battle Damage Assessment (BDA) analysis capabilities. FY24 efforts enhances automated data collection, machine learning (ML) algorithms, DIEE/Strike Tracking and Reporting, List Of Reported Damage (STARLORD) front end interface, field/maintain initial Joint Battle Damage Assessment Repository (JBAR) and develop/populate next version. JTCG/ME plans to field/maintain Joint-AntiAir Combat Effectiveness (J-ACE) v6.0.1, which includes multiple training and OUWGs. Develop J-ACE v6.1 leveraging Air Combat Effects Library (ACEL) v2.0 capabilities that include increased data sets and more enhancements for rotary wing, low altitude combat weapons, and high-fidelity Air-to-Air (AAM) modeling capabilities. JTCG/ME continues enhancement of Cyber JMEM capabilities in new versions of Cyber Operations Lethality Effectiveness (COLE) tool and deployment gateway. Efforts also include OUWGs, analyzing/collecting requirements, enhancing user experience, and build/support to user base (i.e., training). JTCG/ME supports fielded Joint Laser Weaponeering System (JLaWS) tool v3.0 and accreditation, as well as develops/fields JLaWS tool v4.0. JLaWS continues to include new weapon systems, target vulnerability characterization, and enhancements from continued test and analytical events. Focus areas include Model Review Committee and increased data reviews/approvals for increased capability on product. JTCG/ME develops initial Joint High-Power Microwave Applied Weaponeering Knowledge Software (JHAWKS) v1.0 to include enhancements from HPM lethality testing, target vulnerability analysis, physics-based modeling, and data collection. JTCG/ME accredits and field Joint Electronic Attach Protection (JEAP) v1.0 capabilities. Develop JEAP tool v2.0 building on JEAP v1.0 capabilities, as well as refined MBSE and ontology models. JEAP version continues to enhance EA effectiveness (offensive jamming) data standards, collect/approve data, enhance capabilities, and multiple OUWGs. The Electronic Attack Advisory Board (which includes CCMD, Service acquisition and operational representatives) leverages for coordination, model/data reviews, and requirements prioritization for the Joint community for JEAP development. JTCG/ME continues to support a multi-year program for the Joint Targeting Intelligence Modernization (JTIM), which enhances the targeting cycle/enterprise and delivery intelligence to warfighters by defining and monitoring the progress to a resilient, secure,			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 000311 / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
and scalable array of enterprise level data, products, and services. Focus areas include: (1) initial development of NEXTGEN DIEE in Cloud/Micro-services environment while maintaining planned and current capabilities to ensure the product meets the needs of the targeting enterprise, (2) establishment/implementation of integrated capability test environment, and (3) affect Civilian Harm Mitigation and Response Access Plan. JTCG/ME continues to support a multi-year program to enhance/develop next generation of maritime weaponeering tools. Focus areas include: (1) data generation/approval to initial capabilities/tools for urgent Weapon/Target Pairings, (2) development of NEXTGEN Engineering Level tools, (3) address target uncertainty, and (4) affect Civilian Harm Mitigation and Response Access Plan. ***FY 2025 Plans:*** JLF The FY 2025 budget will continue to align with DOT&E's Science &Technology Strategic Plan/Update, National Defense Strategy (NDS) objectives, and the Secretary of Defense's priorities. It will perform a critical role within the Survivability/Lethality Analytic Community by delivering infrastructure, models, simulations, and data to support testing and experimentation of kinetic/non-kinetic systems in operationally relevant contexts to inform, improve and act as a consistent foundation for LFT&E and Warfighter tools and techniques. JLF efforts will also resolve survivability- and lethality-related system design challenges of currently fielded U.S. systems while maintaining awareness of LFT&E challenges across all air, ground, and sea domains. Finally, JLF will continue to lead innovation in LFT&E methods to increase LFT&E efficiency and support rapid fielding. JASP In FY 2025, the JASP will work on multi-year RDT&E projects and initiate new projects approved by the JASP Principal Members Steering Group and OSD/DOT&E. The JASP will support the NDS objectives to "Defend the Homeland" and "Prevail in Conflict" by developing measures to improve threat situational awareness, defeat adversary advanced radio frequency and infrared guided threats, and provide quantifiable improvements in digital and hardware-in-the-loop M&S capability and credibility. JASP will improve aircraft force protection by advancing system hardening against kinetic and non-kinetic threats. JASP will support the NDS objective to 'Build a Resilient Joint Force' by funding the development of more efficient capabilities to advance, test and evaluate aircraft survivability against kinetic and non-kinetic threats. The JCAT will continue to support the Air Force, Army, Marine Corps, and Navy by assessing combat damage incidents, training operators on threat effects and combat damage assessment, and reporting their findings to combatant commanders and the DoD science and technology and acquisition communities. The JASP will continue supporting aircraft survivability education and information exchange through internet sites (restricted access and classified), by publishing the Aircraft Survivability Journal,			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 000311 / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
developing educational materials and conducting training for the DoD and their contractors. The JASP will initiate, continue and complete other projects as approved by the JASP Principal Members Steering Group and OSD/DOT&E. JTCG/ME JTCG/ME plans to field JWS v3.0/DIEE v3.1 and support the development of JWS v3.1/DIEE v3.2 capabilities to support ATD (i.e., Weaponeering, CDE, TCM) at CCMD level in accordance with Joint Staff Policy. JTCG/ME development events will include TPs to develop JWS v3.1/DIEE v3.2 and transition to JWSv3.2/DIEE v3.3 capability development. JTCG/ME will maintain/enhance product DevSecOps and cybersecurity processes (e.g., pipelines, dashboards, MBSE, ontologies, cybersecurity testing) to allow flexibility and efficiencies in addressing secure multi-domain targeting solutions. JTCG/ME will develop/accredit CER reference tables for current weapons inventory and in accordance with the latest CJCSI 3160.01, “No-Strike and the CDE Methodology” for air-to-surface and surface-to-surface weapons. JTCG/ME plans to support/host JMEM training sessions, EIWG, OUWGs, and user help desk. Support ~40+ training sessions with about 400+ students. There is expected increase in training due new JWS/DIEE v3.x and J-ACE v6.x fielding in FY23. JTCG/ME will collect user requirements and product use cases, to support JMEM product development. JTCG/ME will support/deliver reach back analysis packages for collateral damage mitigation, post-forensic, and force protection analyses packages to operational users for high value targets in current operations. JTCG/ME will facilitate coalition interoperability and IEA forums. JTCG/ME will continue to support/deliver JWS version releases and standalone PKLUTs to multiple key coalition partners in support of current operations under FMS. JTCG/ME will maintain/enhance “The Bugle” (Program Confluence Board), JEL, and JARVIS capabilities that serve as the foundation of product information to users, as well as Tri-service approved methodology and data. JTCG/ME plans to continue to support Enhanced Weaponeering and CDE Program improving weaponeering and CDE methodology. These efforts will continue to foster coordination for gaps and priorities. Data from the multiple tests will be transitioned for enhancing, developing, and validating methodology used in JMEM products and T&E efforts. JTCG/ME will maintain/support improved BDA analysis capabilities. These efforts will maintain/enhance automated data collection, ML algorithms, DIEE/STARLORD front end interface, and JBAR.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 000311 / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
JTCG/ME plans to support fielded Joint-AntiAir Combat Effectiveness (J-ACE) v6.0.1, which includes multiple training and OUWGs. Develop/field J-ACE v6.1 leveraging ACEL v2.0 capabilities. Initial development of J-ACE v6.2 leveraging ACEL v3.0. J-ACE future versions will include increased data sets and more capabilities (more rotary wing, low altitude combat weapons, and high-fidelity AAM models). JTCG/ME will continue enhancement of Cyber JMEM capabilities in new versions of the COLE tool and deployment gateway experience. Efforts also include OUWGs, analyzing/collecting requirements, enhancing user experience, and support to user base (i.e., training). JTCG/ME will support fielded JLaWS tool v4.0 and accreditation, as well as develop/field JLaWS tool v5.0. JLaWS continues to include new weapon systems, target vulnerability characterization, and enhancements from continued test and analytical events. JTCG/ME will field initial Joint JHAWKS v1.0 and develop v2.0 to include enhancements from HPM lethality testing, target vulnerability analysis, physics-based modeling, and data collection. JTCG/ME will field JEAP tool v2.0, and develop JEAP v3.0 capabilities, as well as refine MBSE and ontology models. JEAP versions will enhance EA effectiveness (offensive jamming) data standards, collect/approve data, enhance capabilities, and multiple OUWGs. EAAB be leveraged for coordination, model/data reviews, and requirements prioritization for the Joint community for JEAP development. JTCG/ME will continue to support a multi-year program for the JTIM, which will enhance the targeting cycle/enterprise and delivery intelligence to warfighters by defining and monitoring the progress to a resilient, secure, and scalable array of enterprise level data, products, and services. JTCG/ME will continue to support a multi-year program to enhance/develop next generation of maritime weaponeering tools. Focus areas include development of NEXTGEN operational tools based on engineering level tools. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in program funding continues to provide additional support to Joint Targeting Intelligence Modernization (JTIM), which will enhance the targeting cycle/enterprise and delivery intelligence to warfighters by defining and monitoring the progress to a resilient, secure, and scalable array of enterprise level data, products, and services.			
Accomplishments/Planned Programs Subtotals	98.753	103.252	109.561

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 000311 / *LFT&E*

	FY 2023	FY 2024
Congressional Add: Program Increase: Test Capabilities Acceleration - Electromagnetic Spectrum ***FY 2023 Accomplishments:*** Congressional add funding provided test capabilities acceleration for the development of radar emulators, testing capabilities in 5G environment, and the modernization of laboratories and digital technologies to include high-fidelity hardware and M&S to support credible evaluation of countermeasures effectiveness.	41.000	-
Congressional Add: Program Increase: Test Capabilities Acceleration - Hypersonics ***FY 2023 Accomplishments:*** Congressional add funding provided test capabilities acceleration for the delivery of several hypersonic test capabilities and continues the development and validation of digital technologies in support of hypersonic operational effectiveness, lethality evaluations, and weaponeering tools. The Hypersonics Add developed focused on five program areas: 1. Improved Test & Evaluation (T&E) Methods – Classified Image Capture with Low, Slow, Small UAS Integrated Defeat System (LIDS), Infrared Optical Fragment Tracking, and Optical Fragment Tracking on Warhead Arena Tests. 2. Understanding effects of weapon deployment modes – effectiveness and collateral damage, Residual-Single Large Mass (r-SLMP) and SLMP M&S and Data Validation, Sub-scale SLMP and r-SLMP with Representative Payloads and Kinetic Crater M&S; Dynamic Blast M&S and Data Validation. 3. Developing new tools and methods to enhance survivability/lethality evaluation of kinetic threats for blast effects - Aluminized high explosive M&S for Enhanced Blast & Metal Acceleration, Improved Fast Running Models for Aluminized Blast and Natural Fragmentation in Hypersonic Flow. 4. Expanding tri-Service model for comprehensive hypersonic lethality capability and Fast Air Target Encounter Penetration (FATEPEN) Laminate Plate Methodology. 5. Ensuring weaponeering methodologies/tools and collateral damage/risk estimates to support emerging hypersonic weapon systems and Terminal Effects/Delivery Accuracy and Data and Methodology Verification and Validation (V&V). The Hypersonics initiative is providing critical test data, methodologies, and tools to enable the determination of SLMP/r-SLMP hypersonic weapons effectiveness and collateral damage estimates for operational users.	10.000	-
Congressional Add: Program Increase: Test Capabilities Acceleration - Space Systems	15.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 000311 / *LFT&E*

	FY 2023	FY 2024
FY 2023 Accomplishments: Congressional add funding provided pathfinder test capabilities acceleration to deliver additional accredited space system weaponeering capabilities, collateral damage estimation, and support full spectrum space survivability and lethality in joint multi-domain operations.		
Congressional Add: Program Increase: Test Capabilities Acceleration - Data Management	3.200	-
FY 2023 Accomplishments: Congressional add funding provided test capabilities acceleration in the development and implementation of enterprise-level T&E data management solutions and accelerate the use of digital technologies in T&E. The Data Management Initiative Add developed the JARVIS to store tri-Service developed and approved target vulnerability data; and extended the JARVIS framework to create a service specific target vulnerability data repository. The Data Management initiative established connections between Service developed targets and the JTCG/ME products to enable more targets for the warfighter while facilitating Service data maintenance and control.		
Congressional Adds Subtotals	69.200	-

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 Operational Test and Evaluation, Defense	Date: March 2024
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*

COST ($ in Millions)	Prior Years	FY 2023	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	180.781	144.590	58.693	102.922	-	102.922	117.130	139.663	165.236	168.541	Continuing	Continuing
000920: *OTA&A*	180.781	144.590	58.693	102.922	-	102.922	117.130	139.663	165.236	168.541	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Operational Test Activities and Analyses (OTA&A) programs are continuing efforts that provide management and oversight functions, as well as updates to T&E policy and directives to the Department of Defense (DOD). OTA&A programs focus on broad scopes of the weapons systems integration to joint-warfighting and national defense agencies environment; policy, and strategy updates; evolving T&E methodology changes; and data-based integration efforts to align with the DOD acquisition community's digital transition. The OTA&A programs consist of four activities: Joint Test and Evaluation (JT&E); Test and Evaluation Threat Resource Activity (TETRA); Center for Countermeasures (CCM); and Strategic Initiatives, Policy, and Emerging Technology (SIPET).

JT&E projects are T&E activities conducted in a joint military environment that develop process improvements. These multi-Service projects, chartered by the Office of the Secretary of Defense and coordinated with the Joint Staff, CCMDs, and the Services, provide non-materiel solutions that improve the following: joint interoperability of Service systems, technical and operational concepts, joint operational issues, development and validation of joint test methodologies, and test data for validating models, simulations, and test beds. New projects are also encouraged to align their efforts to support the National Defense Strategy (NDS). The JT&E projects address relevant joint warfighting issues in a joint test and evaluation environment by developing and providing new tactics, techniques, and procedures to improve joint capabilities and methodologies.

TETRA, based on a memorandum of agreement between the DOT&E and the Defense Intelligence Agency, provides DOT&E support in the areas of threat resource analysis, intelligence support and threat systems investments. As DOT&E's agent, TETRA provides threat resource analyses on the availability, capabilities and limitations of threat representations (threat simulators, targets, models, U.S. surrogates, and foreign materiel) and analysis of test resources used for operational testing to support DOT&E's assessment of the adequacy of testing for those programs designated for oversight by DOT&E and the Office of the Under Secretary of Defense Acquisition and Sustainment. TETRA provides DOT&E action officers and other DOT&E activities with program-specific threat intelligence support. TETRA also funds management, oversight, and the actual development of common-use threat specifications for threat simulators, threat representative targets, and digital threat models used for T&E.

CCM, a Joint Service Countermeasure (CM) T&E activity, directs, coordinates, supports, and conducts independent CM/counter-CM T&E activities of U.S. and foreign weapon systems, subsystems, sensors, and related components. CCM accomplishes this work in support of DOT&E, weapon system developers, and the Services.

CCM's testing and analyses directly supports evaluations of the operational effectiveness and suitability of CM/counter-CM systems, such as aircraft survivability equipment (ASE) used on rotary-wing and fixed-wing aircraft. CCM's support of the T&E of ASE enables the survivability of aircraft in a high threat environment to enable mission success. In addition, CCM provides test support for directed energy weapons (DEW) and counter-unmanned aircraft systems (C-UAS) programs. CCM improves Service member exercises, training, and pre-deployment activities with expertise in CM/counter-CM technology and capabilities. CCM deployed specialized

instrumentation to collect threat weapon data for threat model development in support of M&S evaluation efforts. Also, cooperative allied efforts are supported in the areas of ASE T&E, DEW T&E, and threat M&S development.

This Program element also consists of SIPET, initiated in 2021 to codify and implement strategy and policy to keep pace with science and technology to modernize T&E tools, processes, infrastructure, and workforce. The core of the SIPET mission is to drive continuous innovation to meet the T&E demands of the future using five strategic pillars:

Pillar 1: Test the way we fight
Pillar 2: Accelerate the delivery of weapons that work
Pillar 3: Improve the survivability of DoD in a contested environment
Pillar 4: Pioneer T&E of weapon systems built to change over time
Pillar 5: Foster an agile and enduring T&E Enterprise Workforce.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	56.690	58.693	59.477	-	59.477
Current President's Budget	144.590	58.693	102.922	-	102.922
Total Adjustments	87.900	0.000	43.445	-	43.445
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	87.900	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Transfer in: Funding from R-1 PE 0605118OTE to 0605814OTE	-	-	43.445	-	43.445

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 000920: *OTA&A*		
Congressional Add: *Program Increase: Test Capabilities Acceleration - Directed Energy*	7.500	-
Congressional Add: *Program Increase: Test Capabilities Acceleration - Space Systems*	7.500	-
Congressional Add: *Program Increase: Test Capabilities Acceleration - Targets*	25.000	-
Congressional Add: *Program Increase: Test Capabilities Acceleration - Data Management*	16.400	-
Congressional Add: *Program Increase: Test Capabilities Acceleration - Artificial Intelligence*	17.500	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Operational Test and Evaluation, Defense	Date: March 2024
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605814OTE *I Operational Test Activities and Analyses*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Program Increase: Test Capabilities Acceleration - AI/Autonomous Systems*	6.000	-
Congressional Add: *Program Increase: Test Capabilities Acceleration - Innovation Hub*	8.000	-
Congressional Add Subtotals for Project: 000920	87.900	-
Congressional Add Totals for all Projects	87.900	-

Change Summary Explanation

Transfer of funds from R-1 Program Element 0605118OTE to 0605814OTE ($43.445M) for the better alignment of resource execution in continuing efforts from prior year Congressional adds in test capability acceleration for areas of direct energy, space systems, targets, artificial intelligence/autonomous systems, and data management innovations.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense			Date: March 2024
Appropriation/Budget Activity 0460 / 6	R-1 Program Element (Number/Name) PE 0605814OTE / *Operational Test Activities and Analyses*	Project (Number/Name) 000920 / *OTA&A*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
000920: *OTA&A*	180.781	144.590	58.693	102.922	-	102.922	117.130	139.663	165.236	168.541	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Operational Test Activities and Analyses (OTA&A) programs are continuing efforts that provide management and oversight functions, as well as updates to T&E policy and directives to the Department of Defense (DOD). OTA&A programs focus on broad scopes of the weapons systems integration to joint-warfighting and national defense agencies environment; policy, and strategy updates; evolving T&E methodology changes; and data-based integration efforts to align with the DOD acquisition community's digital transition. The OTA&A programs consist of four activities: Joint Test and Evaluation (JT&E); Test and Evaluation Threat Resource Activity (TETRA); Center for Countermeasures (CCM); and Strategic Initiatives, Policy, and Emerging Technology (SIPET).

JT&E projects are T&E activities conducted in a joint military environment that develop process improvements. These multi-Service projects, chartered by the Office of the Secretary of Defense and coordinated with the Joint Staff, CCMDs, and the Services, provide non-materiel solutions that improve the following: joint interoperability of Service systems, technical and operational concepts, joint operational issues, development and validation of joint test methodologies, and test data for validating models, simulations, and test beds. New projects are also encouraged to align their efforts to support the National Defense Strategy (NDS). The JT&E projects address relevant joint warfighting issues in a joint test and evaluation environment by developing and providing new tactics, techniques, and procedures to improve joint capabilities and methodologies.

TETRA, based on a memorandum of agreement between the DOT&E and the Defense Intelligence Agency, provides DOT&E support in the areas of threat resource analysis, intelligence support and threat systems investments. As DOT&E's agent, TETRA provides threat resource analyses on the availability, capabilities and limitations of threat representations (threat simulators, targets, models, U.S. surrogates, and foreign materiel) and analysis of test resources used for operational testing to support DOT&E's assessment of the adequacy of testing for those programs designated for oversight by DOT&E and the Office of the Under Secretary of Defense Acquisition and Sustainment. TETRA provides DOT&E action officers and other DOT&E activities with program-specific threat intelligence support. TETRA also funds management, oversight, and the actual development of common-use threat specifications for threat simulators, threat representative targets, and digital threat models used for T&E.

CCM, a Joint Service Countermeasure (CM) T&E activity, directs, coordinates, supports, and conducts independent CM/counter-CM T&E activities of U.S. and foreign weapon systems, subsystems, sensors, and related components. CCM accomplishes this work in support of DOT&E, weapon system developers, and the Services.

CCM's testing and analyses directly supports evaluations of the operational effectiveness and suitability of CM/counter-CM systems, such as aircraft survivability equipment (ASE) used on rotary-wing and fixed-wing aircraft. CCM's support of the T&E of ASE enables the survivability of aircraft in a high threat environment to enable mission success. In addition, CCM provides test support for directed energy weapons (DEW) and counter-unmanned aircraft systems (C-UAS) programs. CCM improves Service member exercises, training, and pre-deployment activities with expertise in CM/counter-CM technology and capabilities. CCM deployed specialized

instrumentation to collect threat weapon data for threat model development in support of M&S evaluation efforts. Also, cooperative allied efforts are supported in the areas of ASE T&E, DEW T&E, and threat M&S development.

This Program element also consists of SIPET, initiated in 2021 to codify and implement strategy and policy to keep pace with science and technology to modernize T&E tools, processes, infrastructure, and workforce. The core of the SIPET mission is to drive continuous innovation to meet the T&E demands of the future using five strategic pillars:

Pillar 1: Test the way we fight
Pillar 2: Accelerate the delivery of weapons that work
Pillar 3: Improve the survivability of DoD in a contested environment
Pillar 4: Pioneer T&E of weapon systems built to change over time
Pillar 5: Foster an agile and enduring T&E Enterprise Workforce.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Operational Test Activities and Analyses (OTA&A)	56.690	58.693	102.922

Description: OTA&A programs are continuing efforts that provide management and oversight functions, as well as updates to T&E policy and directives to the Department of Defense (DoD). OTA&A programs focus on broad scopes of the weapons systems integration to joint-warfighting and national defense agencies environment; policy, and strategy updates; evolving T&E methodology changes; and data-based integration efforts to align with the DoD acquisition community's digital transition. The OTA&A programs consist of four activities: JT&E, TETRA, CCM, and SIPET.

FY 2024 Plans:
JT&E
In FY 2024, JT&E continues two new Joint Feasibility Study projects of which one will be selected to conduct a new Joint Test project. JT&E also is working five new Quick Reaction Test projects, including the following three projects chartered in the first selection cycle:

1. Civil Data Link Cyber Awareness and Resiliency Quick Reaction Test to develop and validate TTP to detect, respond, and recover from resiliency issues with Aircraft Communication, Addressing, and Reporting System via non-materiel mitigations to ensure mission assurance.

2. Joint Contaminated Human Remains Storage and Temporary Interment/Disinterment Quick Reaction Test to provide joint warfighter tactics, techniques, and procedures (TTP) to identify storage recommendations for JCHR prior to evacuation or temporary interment; provide successful preliminary identification for remains that cannot be repatriated expeditiously during

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 000920 / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
large-scale combat operations; provide accountability for remains at the temporary interment site; and identify safety concerns for personnel executing the tasks. 3. Nuclear Command, Control, and Communications Risk Assessment Quick Reaction Test to develop a holistic multi-domain focused process with associated indications, warnings, and triggers to improve nuclear command, control, and communications decision-making. Two Joint Test and two Quick Reaction Test projects from FY 2023 continue evaluation in FY 2024: 1. Joint Continental United States Director Over-the-Horizon Radar Joint Test to develop, test, and evaluate operational and tactical level TTP that integrates maneuver and electronic warfare capabilities to support joint forces in mitigating adversary anti-access/area denial strategies and capabilities to maintain freedom of maneuver in air and maritime operational domain areas. 2. Joint Convention Nuclear Integration Joint Test develops and operationally tests and evaluates a CONOPS to define major mission functions for various strategic scenarios for use by the responsible organizations. 3. Automated Tactical Targeting and Counterfire Kill Web System Quick Reaction Test develops and validates TTP to optimize the automation provided by ATTACKS to support the Counter-Fire Task Force mission, including Tactical Air Control Party operators and Air Battle Managers to maximize operational efficiency and effectiveness. 4. Joint Interface Control Cell Resiliency Quick Reaction Test develops TTP that combats adversarial cyber interference and enhances the ability of Joint Interface Control Officers to better detect, respond, and recover from cyber interference in the tactical data links networks. JT&E will close five Quick Reaction Test projects: 1. Commander's Concepts (CONOPS) for Novel Information Warfare Capabilities Quick Reaction Test to refine, test, and validate a joint CONOPS to support logistics and authorities for a new non-kinetic capability executed by U.S. Strategic Command assigned assets. 2. Joint Aviation Signature Management Analysis, Application, and Rehearsals Tool Quick Reaction Test develops TTP to measure electromagnetic signatures of low level, joint tactical aircraft to produce a series of models that will be used to increase aviation combat survivability through a reduction in aircraft susceptibility in multi-domain operations.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 000920 / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
3. Joint Distributed Command and Control Quick Reaction Test develops, tests, and evaluates a CONOPS that provides a distributed, resilient, and flexible Joint Distributed Nuclear Command and Control capability with future resources and technology. 4. Joint-Global Hypersonic Operational Sensor Tracking Quick Reaction Test develops, tests, and delivers a validated CONOPS and associated TTP to rapidly task external sensors and internal missile defense sensors in real-time during advanced trans-regional threat events. 5. Joint Operation NOBLE EAGLE Link-16 Tactical Data Link Quick Reaction addresses TTP for Rotary Wing Air Intercept missions flown in conjunction with Air Force and Navy aircraft and Ground Based Air Defenses controlled by the Eastern and Western Air Defense Sectors in the Continental North American Aerospace Defense Command Region. TETRA In FY 2024, TETRA continues to test planning/working group participation and perform technical analyses to identify threat shortfalls; align with the NDS requirements and; conducts special studies and provide current intelligence support tailored to specific U.S. weapon systems acquisitions. TETRA will: - Continue to create standard operating procedures for DOT&E Action Officer intelligence support to reduce risk and capability. - Execute and deliver eight DoD/DOT&E/IC academic and applied science articles on use, development, testing, and return on investment for Artificial Intelligence (AI), Superteaming, AI team augmentation and T&E of AI. - Execute initiatives that directly influence or improve the areas of software intensive systems and cybersecurity by moving to digital engineering via accredited models and simulation while continuing to “Shift Left” with integrated developmental and operational testing. TETRA plans to improve the test environments of growing importance on Human-System Interaction and adapting T&E for emergent technologies. - Execute initiatives to understand and develop test capability for emerging technologies, T&E infrastructure, tools, and processes for emerging capabilities and threats (space, hypersonics, directed energy, AI, ML, infrared and radio frequency, 5th Generation Aerial Target (5GAT), automated & autonomous cybersecurity testing, and neural networks to address current and potential threats.) - Continue to support the reduction in acquisition and test timelines while increasing test capabilities against Great Power threats.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 000920 / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue to foster rapid technological advancements in the areas of threat representation for T&E and threat test resources by incorporating innovative technologies from the intelligence community into threat test assets to provide improved test fidelity and performance with cost savings. - Continue identifying initiatives to improve cyberspace threat representation and prediction, cyber-economic threats to DoD systems and scalable cyberspace threat test environments that can interface with cyber test networks; and to conduct offensive and defensive cyberspace operations without significantly impacting critical operational capabilities. - Continue to develop and build threat representative decoys and shells to support tests conducted on the ranges. - Support initiatives based on the cognitive radar definition results of the white paper study to develop models for testing against advanced cognitive radar threats. - Continue to pursue initiatives for improving satellite and space threat representations and developing alternatives for conducting threat realistic operational testing in response to environmental limitations. - Continue to support the US warfighter by providing threat intelligence relevant to emerging threats such as artificial intelligence, autonomy, robotics, directed energy, hypersonic and biotechnology to ensure operational and developmental testing occurs against realistic threat representations, including (but not limited to) threats from both revisionist powers such as China and Russia threats from rogue regimes such as North Korea and Iran, and threats from non-state actors. - Continue to conduct threat intelligence investigations that support use of innovative technologies in the areas of artificial intelligence, autonomy, robotics, machine learning, quantum computing, lasers, nanotechnology, chemical and biological, directed energy, hypersonic and biotechnology being developed by nation states to improve threat representation in the contested domain of air, land, sea, space and cyberspace. - Continue to support initiatives for the development of Great Power threat representative jammers, for use in terrain constricted tests as a directional active electronically steered array jammer that will limit Federal Aviation Administration and other common jammer restrictions/acceptance/endorsement for T&E use. - Continue to sustain and manage threat M&S to support test and evaluation by overseeing and coordinating intelligence community developed threat models, performing threat model anomaly resolution resolving differences from live fire testing, integrating threat models into T&E facilities and distributing performance and signature models to T&E users.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 000920 / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue to represent DOT&E at foreign material exchanges, inter-agency coordinating groups, and non-proliferation groups to raise awareness of T&E needs for foreign materiel, coordinate service requirements, and de-conflict and prioritize foreign materiel requirements for T&E. - Continue to provide intelligence support to DOT&E staff to address specific questions on threat systems affecting programs on the OSD T&E Oversight list and provide briefings and special intelligence reports when necessary. - Continue to provide DOT&E representation at the Threat Steering Group (TSG) in support of the Validated Online Lifecycle Threat (VOLT) Report process. - Continue to represent DOT&E interests on the Infrastructure Assurance Analysis Working Group and the Intelligence Mission Data Oversight Board responsible for development, production and sharing issues affecting the intelligence data supporting weapons systems acquisition. - Continue to serve DOT&E's interests on the ESG and provide access to the Incident Management, Analysis and Reporting System (IMARS). - Continue to manage Information Technology Enterprise Architecture Management System (ITEAMS) efforts supporting programs on the OSD Oversight T&E List by conducting intelligence "deep dives" to produce intelligence in sufficient detail to develop new threat test assets/threat systems for T&E. - Continue the independent review of validation reports to ensure the correct threat data and critical parameters are presented in the reports to assess the threat representations' capabilities to replicate a real-world threat system. - Continue to provide threat intelligence and validation support at the JASP reviews to ensure there is no duplication of effort and independently ensure the correct threat data and critical parameters are presented to assess the real-world threat representations. - Continue serving as the T&E Regional Infrastructure Working Group (RIWG) DOT&E lead for targets and threat systems investments. - Continue serving as the DOT&E agent for oversight in the coordination, development and execution of all Test Resource Management Center (TRMC) funded projects within RIWG's Strategic & Foundational Portfolios and legacy project investments; review Threat Systems investments to prevent any duplication of effort and encourage cost savings by the sharing or multi-service use of newly developed threat representations to T&E.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 000920 / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue to lead Allied/NATO initiatives, tests, intelligence, and modeling & simulation collaborative capability. - Provide threat resource analyses on the availability, capabilities and limitations of threat representations in electronic warfare to develop threat models and various emitters. TETRA continues its efforts to significantly improve the standards set of threat performance models as the global threat environment evolves. These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is threat realistic and suitable, promotes common solutions to Service threat representation needs and ultimately supports the warfighter. CCM CCM will emphasize support of the DOT&E enterprise, with a clear focus on Title 10 oversight programs, ASE, DEW, C-UAS, and warfighter training events. CCM expects to increase focus on additional DoD critical technology areas that may have T&E gaps, which will contribute to the testing of future weapons and the understanding of emerging threats. CCM is supporting the DOT&E Space Electronic Warfare (EW) and Cyber Working Group to identify test resource gaps. CCM's ability to provide unique test equipment and expertise will remain a benefit to all Services, and the ongoing Improvement and Modernization plans will ensure test capabilities are provided at a cost savings across the DoD. Additional instrumentation, personnel, and training will be key to ensuring our ongoing test support continues to add significance in emerging technology areas. CCM is contributing to the execution of the DOT&E Strategy Implementation Plan to support credible evaluation of the future joint force. CCM will build critical test and evaluation capabilities and the workforce necessary to evaluate emerging warfighting technologies. This includes mobile, open-air data collection and analysis capabilities that will support the T&E of the rapid prototyping and fielding needs of these systems. The mobile test capability will allow T&E of operational representative test scenarios in an open-air environment to support the accelerated development and fielding of CM systems within the DoD. SIPET SIPET plans to define the capability needs of the future based on known trends, capability gaps, and future needs in a document that capture all domain T&E, Joint T&E, and test range requirements. SIPET will produce and foster a methodology to continue to capture these requirements over time. Also included in this work is a design concept for a data-backed, all-domain Modeling and Simulation (M&S) environment to integrate with live, multi-domain operational testing using Models-Based Systems Engineering (MBSE) to align with the DoD acquisition community's digital transition.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 000920 / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
SIPET plans to use the 2020 DoD Data Strategy to implement data standards, data stores, knowledge management tools, and automated data fusion/analytic tools to expedite data collection, data analysis and reporting of T&E outcomes of DoD systems and services. This work will re-envision the T&E planning and analysis with increased AI and automation tools to support the T&E community. Key to this work is an approach codifies how system behavior can be inferred from a collection of T&E evidence that supports efficient decision-making processes. We will address well known T&E challenges that have plagued the community like determining test adequacy for any phase of test along with determining and how to T&E systems that mature over time (or acquisition milestones). SIPET plans to enable the test and evaluation community to address survivability-related challenges, and the importance of evaluating synergistic kinetic as well as non-kinetic effects. This work will standardize and automate mission-based assessments that allow for: adequate and efficient characterization of system designs, identification & prioritization of vulnerabilities, identification of potential attack conditions, and evaluations of threat effects on the mission. SIPET will deliver a Full Spectrum Survivability Tool (FSST) set capable of predicting vulnerabilities and their mission effects when facing kinetic and non-kinetic threats, and a responsive threat infrastructure that will enable dynamic updates as threats continue to evolve. This will improve processes and key measures that focus the T&E design on mission and risk based anticipated limitations to adequately evaluate mission-level vulnerabilities to full spectrum threats. SIPET plans to innovate and integrate T&E within and across three key areas: 1) Digital Twins, 2) Artificial Intelligence (AI), and 3) Software-Related Technologies. SIPET will develop and standardize an architecture for calibrating and accrediting models based on real, operational data. SIPET will use AI and Machine Learning (ML) use cases to write requirements and policy to address current gaps in operational T&E performance. SIPET will design software, information assurance, and cybersecurity requirements for software pipelines and factories. SIPET will rework its Workforce Competency Model to account for changing job demands in response to a continuously changing and dynamic operating environment. SIPET will partner will DAU develop an overall DoD T&E competency model to facilitate a T&E Enterprise Mindset. ***FY 2025 Plans:*** JT&E In FY 2025, JT&E plans to start two new Joint Feasibility Study projects, one new Joint Test project, and five new Quick Reaction Test projects. JT&E plans to close the two Joint Test projects that started in FY 2023 and the five Quick Reaction Test projects that started in FY 2024. One Joint Test project initiated in FY 2024 will continue through FY 2025.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 000920 / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
TETRA In FY 2025, TETRA plans to continue all the prior actions identified in FY 2024 while providing new support tailored to specific U.S. weapon systems acquisitions based on the availability of funding. TETRA will: - Continue to conduct threat intelligence analysis of foreign Integrated Air Defense Systems (IADS) and threat weapons kill-web capabilities to address increased threat weapons networking capabilities and enable improved documentation in TEMPS & Validated Online Lifecycle Threat (VOLT) Reports to improve testing of U.S. capabilities in a threat-representative, integrated kill-web environment. - Support the Space Electronic Warfare and Cyber Warfare definition roadmap initiative to begin developing the models and processes required to test jammers employing artificial intelligence techniques in a threat representative environment. - Develop the first AI Superteam for DOT&E and test community. - Provide threat resource analyses on the availability, capabilities, and limitations of threat representations in electronic warfare to develop threat models and various emitters. - Continue to support DOT&E's I-Plan, Strategy, and execution of Pillars 1-5 required to develop and sustain tools, methods, processes, and the workforce needed to support credible evaluation of the future Joint Force. Threat Systems will continue its efforts to significantly improve the standards set of threat performance models in a dynamic environment as the global threat environment evolves. These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is threat realistic and suitable, promotes common solutions to Service threat representation needs, and ultimately supports the warfighter. CCM In FY 2025, while continuing to support the T&E of ASE, DEW, C-UAS, and warfighter training events, CCM will evaluate its current capabilities and test instrumentation gaps in high priority technology areas for possible solutions to support future T&E modernization. CCM will continue to work with the DOT&E Strategy Implementation Plan and the Test Resource Management Center to identify test capability gaps and propose solutions. SIPET SIPET will expand on its Pathfinders Program for Workforce Recruitment and Retention to establish new experiential learning opportunities to access and build required expertise by increasing scholarship opportunities within the T&E community.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 000920 / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Specifically this work will address the current unmet demand for qualified, certified cyber talent to support the government's ability to cope with future threats and opportunities in cyber, software, and AI by generating a steady flow of experienced cyber talent that can be found in academia. SIPET plans to develop space environment/system modeling and analytic tools that provide validated threat emulators and calibrated response models that accurately characterize and represent contested space for test and training and identify space test infrastructure to support testing space systems or subsystems ground-testing for under certified adversarial threats and combined effects at scale SIPET plans to implement, form, and manage a tester-warfighter innovation (TWI) partnership charter and multidisciplinary action teams comprised of experts from within the government and across industry, academia, federally funded research and development centers, university affiliated research centers, and international partners to modernize assessments of software intensive and cyber physical systems and conduct the following activities related to test, training, and mission planning: characterize the current state; identify and prioritize gaps and develop innovative solutions to advance the current state towards the identified, desired end-state; support accelerated implementation of solutions; and measure improvements. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in funding will support the tester and warfighter innovation partnerships that will bridge the gap from acquisition to fielding by determining how to enable proper system characterization and readiness. This work will foster tester and warfighter collaboration at the earliest stages of T&E highlighting the planning execution and reporting of T&E activities that support the joint warfighter concept.			
Accomplishments/Planned Programs Subtotals	56.690	58.693	102.922

	FY 2023	FY 2024
Congressional Add: Program Increase: Test Capabilities Acceleration - Directed Energy	7.500	-
FY 2023 Accomplishments: Congressional add funding provided to increase the capability of the M&S tools by including additional, operationally relevant adversary EMS targets and by adding rotorcraft systems. DOT&E is providing feedback on a hardware in the loop facility to increase the fidelity of the threat representation in the M&S tool. DOT&E plans to deliver a capability of testing live fire cyber effects delivered through EMS channels, while developing a method and deliver data to support evaluation of a DOD mission thread in a contested EMS environment. DOT&E has initiated an effort to develop agile threat representation to keep pace with near-peer threats.		
Congressional Add: Program Increase: Test Capabilities Acceleration - Space Systems	7.500	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 000920 / *OTA&A*

	FY 2023	FY 2024
FY 2023 Accomplishments: Congressional add funding provided to reduce the uncertainty in the M&S tools by generating and creating data management repositories for test data to support the validation and accreditation of high-fidelity and fast-paced M&S tools for use in T&E. DOT&E is partnering with industry in efforts to provide the capability to collect T&E data in over the ocean testing.		
Congressional Add: Program Increase: Test Capabilities Acceleration - Targets ***FY 2023 Accomplishments:*** Congressional add funding provided to identify the next phase of threat specific and threat capable target modeling capabilities required to represent the multi-domain joint operational environment. DOT&E continues to work with industry and partners to enhance the capability to develop digital representations (twins) of threats capable of processing waveform and jamming, while developing electronic protection algorithms. DOT&E initiated new hardware in the loop capability to emulate the adversary Integrated Air Defense System and development of space threat representative models.	25.000	-
Congressional Add: Program Increase: Test Capabilities Acceleration - Data Management ***FY 2023 Accomplishments:*** Congressional add funding provided to enhance documentation of data management needs across the enterprise while initiating the development of common secure enterprise distributed data and analysis environment integrated with modeling & simulation. DOT&E seeks to enhance efficiency and accuracy of data analysis by using automated technology and integration of range capability and target vulnerability data into the Advana platforms for enhanced data analytic capabilities.	16.400	-
Congressional Add: Program Increase: Test Capabilities Acceleration - Artificial Intelligence ***FY 2023 Accomplishments:*** Congressional add funding provided to test capabilities acceleration for the technology and infrastructure development, as well as T&E methods, tools, and processes to support artificially intelligent-reliant cognitive electronic warfare systems models development.	17.500	-
Congressional Add: Program Increase: Test Capabilities Acceleration - AI/Autonomous Systems ***FY 2023 Accomplishments:*** Congressional add funding provided to test capabilities acceleration for the technology and infrastructure development, as well as T&E methods, tools, and processes to support AI/ autonomous systems T&E.	6.000	-
Congressional Add: Program Increase: Test Capabilities Acceleration - Innovation Hub ***FY 2023 Accomplishments:*** Congressional add funding provided to accelerate our FY22 Strategy Plan which will address software- and cyber-related T&E challenges by increasing the cyber survivability posture, effectiveness, suitability, and survivability of software-reliant systems. DOT&E seeks to improve access to talent through internships, faculty, and scholarships; while creating and providing centralized access to on-call	8.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Operational Test and Evaluation, Defense		Date: March 2024
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 000920 / *OTA&A*

	FY 2023	FY 2024
software and cyber test and evaluation expertise; and enhanced software and cyber test and evaluation training opportunities.		
Congressional Adds Subtotals	87.900	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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