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**Department of Defense
Fiscal Year (FY) 2022 Budget Estimates**

May 2021



The Joint Staff

Defense-Wide Justification Book Volume 5 of 5

Research, Development, Test & Evaluation, Defense-Wide

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Footnotes

FY 2020 Actuals

Includes Division A, Title IX and X of the Consolidated Appropriations Act, 2020 (P.L. 116- 93), Division F, Title IV and V from the Further Consolidated Appropriations Act, 2020 (P.L. 116-94) and the Coronavirus Aid, Relief, and Economic Security Act (P.L. 116-136).

FY 2021 Enacted

Includes Division C, Title IX and Division J, Title IV of the Consolidated Appropriations Act, 2021 (P.L. 116-260).

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Department of Defense
FY 2022 President's Budget
Exhibit R-1 FY 2022 President's Budget
Total Obligational Authority
(Dollars in Thousands)

03 May 2021

Appropriation -----	FY 2020 Total -----	FY 2021 Total -----	FY 2022 Total -----
Research, Development, Test & Eval, DW	150,246	118,451	109,061
Total Research, Development, Test & Evaluation	150,246	118,451	109,061

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Department of Defense
 FY 2022 President's Budget
 Exhibit R-1 FY 2022 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

03 May 2021

Summary Recap of Budget Activities -----	FY 2020 Total	FY 2021 Total	FY 2022 Total
-----	-----	-----	-----
Advanced Component Development & Prototypes	20,062	19,190	17,439
Management Support	125,647	96,222	91,622
Operational Systems Development	4,537	3,039	
Total Research, Development, Test & Evaluation	150,246	118,451	109,061
 Summary Recap of FYDP Programs -----			
General Purpose Forces	13,753	6,097	977
Intelligence and Communications	553	545	
Research and Development	95,867	80,684	78,554
Training Medical and Other	40,073	31,125	29,530
Total Research, Development, Test & Evaluation	150,246	118,451	109,061

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Defense-Wide
FY 2022 President's Budget
Exhibit R-1 FY 2022 President's Budget
Total Obligational Authority
(Dollars in Thousands)

03 May 2021

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Defense-Wide
FY 2022 President's Budget
Exhibit R-1 FY 2022 President's Budget
Total Obligational Authority
(Dollars in Thousands)

03 May 2021

Appropriation -----	FY 2020 Total	FY 2021 Total	FY 2022 Total
The Joint Staff	150,246	118,451	109,061
Total Research, Development, Test & Evaluation	150,246	118,451	109,061

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Defense-Wide
FY 2022 President's Budget
Exhibit R-1 FY 2022 President's Budget
Total Obligational Authority
(Dollars in Thousands)

03 May 2021

Appropriation: 0400D Research, Development, Test & Eval, DW

Line No	Program Element Number	Item	Act	FY 2020 Total	FY 2021 Total	FY 2022 Total	Se
112	0604826J	Joint C5 Capability Development, Integration and interoperability Assessments	04	20,062	19,190	17,439	U
		Advanced Component Development & Prototypes		20,062	19,190	17,439	
149	0603829J	Joint Capability Experimentation	06	10,971	11,239	8,444	U
157	0605126J	Joint Integrated Air and Missile Defense Organization (JIAMDO)	06	64,834	50,255	52,671	U
183	0204571J	Joint Staff Analytical Support	06	9,216	3,058	977	U
188	0303166J	Support to Information Operations (IO) Capabilities	06	553	545		U
195	0804768J	COCOM Exercise Engagement and Training Transformation (CE2T2) - non-MHA	06	40,073	31,125	29,530	U
		Management Support		125,647	96,222	91,622	
208	0208043J	Planning and Decision Aid System (PDAS)	07	4,537	3,039		U
		Operational Systems Development		4,537	3,039		
Total Research, Development, Test & Eval, DW				150,246	118,451	109,061	

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The Joint Staff
 FY 2022 President's Budget
 Exhibit R-1 FY 2022 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

03 May 2021

Appropriation: 0400D Research, Development, Test & Eval, DW

Line No	Program Element Number	Item	Act	FY 2020 Total	FY 2021 Total	FY 2022 Total	Sec
112	0604826J	Joint C5 Capability Development, Integration and interoperability Assessments	04	20,062	19,190	17,439	U
		Advanced Component Development & Prototypes		20,062	19,190	17,439	
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Total The Joint Staff				150,246	118,451	109,061	

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

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

Line #	Budget Activity	Program Element Number	Program Element Title	Page
112	04	0604826J	Joint C5 Capability Development, Integration, and Interoperability Assessments.....	Volume 5 - 1

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

Line #	Budget Activity	Program Element Number	Program Element Title	Page
149	06	0603829J	Joint Capability Experimentation.....	Volume 5 - 21
157	06	0605126J	Joint Integrated Air & Missile Defense Organization (JIAMDO).....	Volume 5 - 25
183	06	0204571J	Joint Staff Analytical Support.....	Volume 5 - 37
188	06	0303166J	Support to Information Operations (IO) Capabilities.....	Volume 5 - 43
195	06	0804768J	COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA.....	Volume 5 - 47

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

Line #	Budget Activity	Program Element Number	Program Element Title	Page
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COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA	0804768J	195	06.....	Volume 5 - 47
Joint C5 Capability Development, Integration, and Interoperability Assessments	0604826J	112	04.....	Volume 5 - 1
Joint Capability Experimentation	0603829J	149	06.....	Volume 5 - 21
Joint Integrated Air & Missile Defense Organization (JIAMDO)	0605126J	157	06.....	Volume 5 - 25
Joint Staff Analytical Support	0204571J	183	06.....	Volume 5 - 37
Planning and Decision Aid System (PDAS)	0208043J	208	07.....	Volume 5 - 67
Support to Information Operations (IO) Capabilities	0303166J	188	06.....	Volume 5 - 43

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 The Joint Staff	Date: May 2021
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604826J <i>I Joint C5 Capability Development, Integration, and Interoperability Assessments</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	91.403	20.062	19.190	17.439	-	17.439	-	-	-	-	-	-
001: <i>C5 Assessments and Analyses</i>	47.628	9.275	9.048	9.208	-	9.208	-	-	-	-	-	-
002: <i>C5 Capability Development</i>	26.050	5.787	5.119	4.750	-	4.750	-	-	-	-	-	-
003: <i>Joint Fires C2 Interoperability</i>	17.725	5.000	5.023	3.481	-	3.481	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Lead command, control, communications, computers, and cyber (C5) assessments, analyses, capability development, and joint fires command and control (C2) interoperability efforts required to achieve an effective, integrated, and interoperable joint force. Efforts include C5 requirements determination, C5 architectures development and integration, C5 data standardization, joint fires C2 interoperability, and C5 integration and interoperability assessments. The Joint Staff has recently been designated the DoD's lead for the integration of Joint All-Domain Command & Control (JADC2) capabilities and development efforts across the Department. The Joint C5 program is the Joint Staff focal point for this responsibility, and DoD's only program directly attributable to JADC2. The Joint C5 R&D projects collectively provide the analytical basis and action arm of the JADC2 Cross Functional Teams charged with execution of the DoD JADC2 Strategy and Implementation Plan.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	20.062	19.190	19.445	-	19.445
Current President's Budget	20.062	19.190	17.439	-	17.439
Total Adjustments	0.000	0.000	-2.006	-	-2.006
• Congressional General Reductions	0.000	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Total Other Adjustments	-	-	-2.006	-	-2.006

Change Summary Explanation

Changes from FY 2021 to FY 2022:
Reductions to travel funds, inflation and other adjustments.

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments				Project (Number/Name) 001 / C5 Assessments and Analyses			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
001: C5 Assessments and Analyses	47.628	9.275	9.048	9.208	-	9.208	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

As the new DoD lead for the integration of Joint All-Domain Command and Control (JADC2) capabilities and development efforts, conduct analysis and assessment activities to inform and enhance joint warfighter capabilities in support of national security requirements. Provide timely, facts-based findings and recommendations to DoD decision-making processes that validate operational requirements and fund interoperable capabilities. Conduct interoperability assessments and analyses that evaluate capability and interoperability of fielded and emerging command, control, communications, computers, and cyber (C5), and systems in response to operational issues and shortfalls. Conduct integration assessment efforts focused on emerging capabilities in wireless devices and security, operational and tactical command and control, networking, satellite communications, advanced secure digital datalinks, and allied/coalition data exchanges.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: C5 Assessments and Analyses	9.275	9.048	9.208
Description: Support the Chairman's statutory requirement to advise the Secretary of Defense on development of joint command, control, communications and cyber capability, including integration and interoperability of such capability through requirements, integrated architectures, data standards and assessments. Also supports the Chairman's focus area of improving joint warfighting capability and the SECDEF's line of effort to strengthen alliances and attract new partners. Interoperability is assessed and integrated solutions are developed to improve C5 system performance by providing recommendations based on operational architectures and evolving standards and data products. Combatant Commands, Services, Agencies and Allies/Coalition partners are provided a laboratory, exercise and assessment venue for the warfighter and capability developer to identify and solve interoperability, integration, and cyber issues. FY 2021 Plans: Support National Military Strategy and Globally Integrated Operations (GIO) by conducting quantifiable analysis, assessment, and integration activities that inform and enhance Joint warfighter capabilities and interoperability. Activities utilize actual and replicated operational environments and networks to conduct capability development, support joint and coalition experimentation, and support acquisition and systems employment decisions. Continue to address warfighter needs across all domains by conducting activities in rapidly reconfigurable command, control, computers, communications, cyber-defense, intelligence, surveillance, and reconnaissance (C5ISR) laboratories replicating joint and coalition system of systems operational environments as well as in operational venues such as exercises. Employ a deployable assessment capability supporting the collection and			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	Project (Number/Name) 001 / <i>C5 Assessments and Analyses</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
analysis of decision quality data for command and control operations from the operational to lowest tactical echelons of command, in field conditions, in real time to provide immediate feedback on the data being collected. Projects include:			
Bold Quest (BQ) 2021 Coalition Interoperability Demonstrations – Support the design, plan, and execution of the BQ events which address close air support, Mission Partner Environment (MPE) / Federated Mission Networking (FMN) development/assessments, counter Unmanned Aircraft Systems (UAS), Identification, Friend or Foe (IFF) testing, and cyber effects on operations for U.S. forces and coalition partners. Support includes accredited exercise networks, associated command and control systems, and data collection and analysis capabilities. Cyber Guard (CG)/Cyber Flag (CF) - Provide assessment and technical support to cyber exercises to include C2 information systems, while conducting assessments of cyber effects on systems integrated into the DoD Information Network. Counter-UAS (CUAS) – Data collection and analysis during RTD&E test events as well as in support of urgent operational needs in active operational theaters. Analysis covers all aspects of CUAS defense, including lethal engagements. Joint Tactical Integration - Integrate, refine, and accelerate the migration of Special Operating Forces (SOF) battle-proven capabilities to rapidly improve the Joint warfighting capabilities and lethality of general purpose forces in accordance with governing instructions. Capabilities include integrated secure radio networks, tactical data links, tactical cellular, enroute satellite communications, enhanced situational awareness, fratricide prevention, and a more efficient kill-chain. Coalition Interoperability and Assurance Validation (CIAV) - Assess US and coalition systems support in-theater operations by ensuring C5 capabilities adequacy before current operational employment in the Afghan and Iraq areas of operations. Conduct CIAV projects in the INDOPACOM area of responsibility. Joint Network Integration Environment – Integrate advanced C5 technologies to improve the capabilities and resiliency of US Force Korea's warfighting networks. Improve information sharing between U.S., Republic of Korea, and planned mission partner forces. Joint All-Domain Command and Control – Provide the joint hub for an integrated wide-area experimental network and conduct supporting interoperability assessments and integration activities. Contribute to wargames, exercises and experiments that explore current and future warfighting C2 concepts with coalition partners including Mission Partner Environments.			
FY 2022 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	Project (Number/Name) 001 / <i>C5 Assessments and Analyses</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
Support National Military Strategy and Globally Integrated Operations (GIO) by conducting quantifiable analysis, assessment, and integration activities that inform and enhance Joint warfighter capabilities and interoperability. Activities utilize actual and replicated operational environments and networks to conduct capability development, support joint and coalition experimentation, and support acquisition and systems employment decisions. Continue to address warfighter needs across all domains by conducting activities in rapidly reconfigurable C5ISR laboratories replicating joint and coalition system of systems operational environments as well as in operational venues such as exercises. Employ a deployable assessment capability supporting the collection and analysis of decision quality data for command and control operations from the operational to lowest tactical echelons of command, in field conditions, in real time to provide immediate feedback on the data being collected. Projects include: Bold Quest (BQ) 2022 Coalition Interoperability Demonstrations – Support the design, plan, and execution of the BQ events which address close air support, Mission Partner Environment (MPE) / Federated Mission Networking (FMN) development/assessments, counter Unmanned Aircraft Systems (UAS), Identification, Friend or Foe (IFF) testing, and cyber effects on operations for U.S. forces and coalition partners. Support includes accredited exercise networks, associated C2 systems, and data collection and analysis capabilities. Cyber Guard (CG)/Cyber Flag (CF) - Provide assessment and technical support to cyber exercises to include C2 information systems, while conducting assessments of cyber effects on systems integrated into the DoD Information Network. Counter-UAS (CUAS) – Data collection and analysis during RTD&E test events as well as in support of urgent operational needs in active operational theaters. Analysis covers all aspects of CUAS defense, including lethal engagements. Joint Tactical Integration - Integrate, refine, and accelerate the migration of Special Operating Forces (SOF) battle-proven capabilities to rapidly improve the Joint warfighting capabilities and lethality of general purpose forces in accordance with governing instructions. Capabilities include integrated secure radio networks, tactical data links, tactical cellular, enroute satellite communications, enhanced situational awareness, fratricide prevention, and a more efficient kill-chain. Coalition Interoperability and Assurance Validation (CIAV) - Assess US and coalition systems support in-theater operations by ensuring C5 capabilities adequacy before current operational employment in the Afghan and Iraq areas of operations. Conduct CIAV projects in the INDOPACOM area of responsibility. Joint Network Integration Environment – Integrate advanced C5 technologies to improve the capabilities and resiliency of US Force Korea's warfighting networks. Improve information sharing between U.S., Republic of Korea, and planned mission partner forces.			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	Project (Number/Name) 001 / <i>C5 Assessments and Analyses</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
Joint All-Domain Command and Control – Provide the joint hub for an integrated wide-area experimental network and conduct supporting interoperability assessments and integration activities. Contribute to wargames, exercises and experiments that explore current and future warfighting C2 concepts with coalition partners including Mission Partner Environments. <i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> Adjustments to travel funds and non-pay, non-fuel inflation adjustment, and other minor adjustments.			
Accomplishments/Planned Programs Subtotals		9.275	9.048
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
Biannual review of C4/Cyber resources includes an examination of the current and future Budget/Spend Plan, Lines of Effort, Acquisition Strategy and current Execution. The award of a Multi Award Contract (MAC) seeks efficiencies in the performance of requirements for C4/Cyber and Information services, and promotes contractor teaming to provide critical technical and management support. The MAC approach also seeks to reduce the costs of current contract support through the elimination of multiple fees for service contracts, and through the competitive award of contract services.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 The Joint Staff												Date: May 2021			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments						Project (Number/Name) 001 / C5 Assessments and Analyses			

Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Management and Engineering Technical Services	C/CPFF	Various : Norfolk, Suffolk, Eglin	47.628	9.275	Oct 2019	9.048	Oct 2020	9.208		-		9.208	-	-	-
Subtotal			47.628	9.275		9.048		9.208		-		9.208	-	-	N/A

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	47.628	9.275	9.048	9.208	-	9.208	-	-	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 The Joint Staff			Date: May 2021
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments	Project (Number/Name) 001 / C5 Assessments and Analyses	

	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Joint C5I																												
C5 Assessments and Analyses																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 The Joint Staff		Date: May 2021
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments	Project (Number/Name) 001 / C5 Assessments and Analyses

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Joint C5I				
C5 Assessments and Analyses	1	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments				Project (Number/Name) 002 / C5 Capability Development			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
002: C5 Capability Development	26.050	5.787	5.119	4.750	-	4.750	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
C5 capability development functions as the DoD requirements lead for the joint command and control family of programs, Joint cyber, and requirements lead for mission partner environment (MPE). The program also develops joint C4 architectures, joint common systems functions, joint mission threads, leads analysis and reviews architectures and standards in joint capability development systems. C5 development enables warfighter access to authoritative data sources and improves data interoperability by establishing common C2 data and service standards.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2020	FY 2021	FY 2022	
Title: C5 Capability Development									5.787	5.119	4.750	
Description: Lead C2 capability development and integration in order to achieve an interdependent joint force. Supports Chairman's focus to improve joint warfighter capability and enhance global integration. This will be accomplished through four focus areas: capability development, C4 architectures, data and services, and interoperability and integration.												
FY 2021 Plans: Capability Development - Analyze/coordinate out-year C2 integrated priority lists, capability gaps, and Joint C2 operational priorities. Create C2 requirements in concert with DoD's Digital Modernization Strategy. Specifically, address GCCS-J replacement by GCCS-JE to include robust functionality during disconnected operations. Pursue joint capability development/integration for Joint All Domain C2 (JADC2), Command and Control of the Information Environment (C2IE), Joint Force Capability Catalog (JFCC)/Global Laydown Server (GLS)/ Project ORION, Joint Planning Services (JPS) Personnel Recovery and Missile Warning in accordance with the Secretary's direction. C5 Architectures - Provide architecture, mission thread, and mission-based analysis development and analysis products as required to support the Chairman's directed focus areas and Chief Information Officer (CIO) lines of operations. Conduct analysis and validate warfighting requirements architectures and engineering designs for continued implementation of the Joint Information Environment (JIE). Update the Joint Common Service/System Function List and Warfighter Mission Area (WMA) Architecture Development Standard to improve WMA architecture integration and interoperability. Continue to improve and expand the quality and amount of architecture information and data available for analysis and reuse on the WMA architecture portal. Conduct analyses and develop architectures and metrics for Joint Capabilities Integration and Development System (JCIDS) C5 capability requirement documents.												

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff			Date: May 2021		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>		Project (Number/Name) 002 / <i>C5 Capability Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2020	FY 2021	FY 2022
Data and Services – Develop, promote, and integrate common enterprise data and services requirements, standards, technical specifications, and policy to improve Joint All Domain C2 interoperability and information sharing with Joint, interagency and coalition mission partners. Perform and lead proof of concept activities, including cloud-based data lakes that enables Artificial Intelligence and cybersecurity standardization of the National Information Exchange Model (NIEM) and the North Atlantic Treaty Organization (NATO) Core Data Framework (NCDF) with selected Joint All Domain C2 communities of interest, including robotics and autonomous systems. Conduct one Joint All Domain C2 complex proof of concept demonstration with NATO with interested Services, Agencies and coalition partners to improve warfighter interoperability and enhance operational effectiveness. Continue to lead, align and standardize emerging Joint All Domain C2 tactical data link, symbology (including cyber symbology) and messaging standards to support common enterprise-level information sharing. Continue to support standardization of common warfighter Identity Access Management, robust cyber security, standardized interfaces and common data tagging to promote Joint All Domain C2 interoperability. Coalition Interoperability - International lead for the Coalition Interoperability Assurance and Validation (CIAV) providing interoperability mission-based assessments across the geographic Combatant Commands. Continue to lead mission partner environment (MPE) implementation and support coalition cyber priorities across DoD by leading the MPE cyber security efforts and supporting the federated mission networking (FMN) cyber security working group. Continue to shape North Atlantic Treaty Organization (NATO) federated mission networking (FMN) implementation to ensure it remains aligned with MPE, including related capability development. Provide support to the Combined Communications-Electronics Board to ensure interoperability among the Five Eyes nations (Canada, New Zealand, Australia, UK and U.S.). Lead the NATO-sponsored Coalition Warrior Interoperability Exploration, Experimentation, Examination, Exercises (CWIX) FMN Focus Area to ensure standardized, effective development of Joining, Membership, and Exit Instructions. FY 2022 Plans: Capability Development - Analyze/coordinate out-year C2 integrated priority lists, capability gaps, and Joint C2 operational priorities. Create C2 requirements in concert with DoD's Digital Modernization Strategy. Specifically, address GCCS-J replacement by GCCS-JE to include robust functionality during disconnected operations. Pursue joint capability development/integration for Joint All Domain C2 (JADC2), Command and Control of the Information Environment (C2IE), Joint Force Capability Catalog (JFCC)/Global Laydown Server (GLS)/ Project ORION, Joint Planning Services (JPS) Personnel Recovery and Missile Warning in accordance with the Secretary's direction. C5 Architectures - Provide architecture, mission thread, and mission-based analysis development and analysis products as required to support the Chairman's directed focus areas and Chief Information Officer (CIO) lines of operations. Conduct analysis					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	Project (Number/Name) 002 / <i>C5 Capability Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
and validate warfighting requirements architectures and engineering designs for continued implementation of the Joint Information Environment (JIE). Update the Joint Common Service/System Function List and Warfighter Mission Area (WMA) Architecture Development Standard to improve WMA architecture integration and interoperability. Continue to improve and expand the quality and amount of architecture information and data available for analysis and reuse on the WMA architecture portal. Conduct analyses and develop architectures and metrics for JCIDS C5 capability requirement documents.			
Data and Services – Develop, promote, and integrate common enterprise data and services requirements, standards, technical specifications, and policy to improve Joint All Domain C2 interoperability and information sharing with Joint, interagency and coalition mission partners. Perform and lead proof of concept activities, including cloud-based data lakes that enables Artificial Intelligence and cybersecurity standardization of the National Information Exchange Model (NIEM) and the North Atlantic Treaty Organization (NATO) Core Data Framework (NCDF) with selected Joint All Domain C2 communities of interest, including robotics and autonomous systems. Conduct one Joint All Domain C2 complex proof of concept demonstration with NATO with interested Services, Agencies and coalition partners to improve warfighter interoperability and enhance operational effectiveness. Continue to lead, align and standardize emerging Joint All Domain C2 tactical data link, symbology (including cyber symbology) and messaging standards to support common enterprise-level information sharing. Continue to support standardization of common warfighter Identity Access Management, robust cyber security, standardized interfaces and common data tagging to promote Joint All Domain C2 interoperability.			
Coalition Interoperability - International lead for the Coalition Interoperability Assurance and Validation (CIAV) providing interoperability mission-based assessments across the geographic Combatant Commands. Continue to lead mission partner environment (MPE) implementation and support coalition cyber priorities across DoD by leading the MPE cyber security efforts and supporting the federated mission networking (FMN) cyber security working group. Continue to shape North Atlantic Treaty Organization (NATO) federated mission networking (FMN) implementation to ensure it remains aligned with MPE, including related capability development. Provide support to the Combined Communications-Electronics Board to ensure interoperability among the Five Eyes nations (Canada, New Zealand, Australia, UK and U.S.). Lead the NATO-sponsored Coalition Warrior Interoperability Exploration, Experimentation, Examination, Exercises (CWIX) FMN Focus Area to ensure standardized, effective development of Joining, Membership, and Exit Instructions.			
FY 2021 to FY 2022 Increase/Decrease Statement: Compliance with defense wide economic adjustments, non-pay, non fuel inflation, and minor cost adjustment.			
Accomplishments/Planned Programs Subtotals		5.787	5.119
			4.750

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	Project (Number/Name) 002 / <i>C5 Capability Development</i>
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy Biannual review of Command, Control, Communications, Computers (C4)/Cyber resources includes an examination of the current and future Budget/Spend Plan, Lines of Effort, and Acquisition Strategy. The award of a Multi Award Contract (MAC) seeks efficiencies in the performance of requirements for C4/Cyber and Information services, and promotes contractor teaming to provide critical technical and management support. The MAC approach also seeks to reduce the costs of current contract support through the elimination of multiple fees for service contracts, and through the competitive award of contract services.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 The Joint Staff												Date: May 2021			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments						Project (Number/Name) 002 / C5 Capability Development			
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Managemnt and Engineering Technical Services	C/CPFF	Various : Norfolk, Suffolk	26.050	5.787	Oct 2019	5.119	Oct 2020	4.750		-		4.750	-	-	-
Subtotal			26.050	5.787		5.119		4.750		-		4.750	-	-	N/A
			Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			26.050	5.787		5.119		4.750		-		4.750	-	-	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 The Joint Staff			Date: May 2021
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments	Project (Number/Name) 002 / C5 Capability Development	

	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
C5 Capability Development																												
C5 Capability Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 The Joint Staff			Date: May 2021
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	Project (Number/Name) 002 / <i>C5 Capability Development</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
C5 Capability Development				
C5 Capability Development	1	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments				Project (Number/Name) 003 / Joint Fires C2 Interoperability			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
003: Joint Fires C2 Interoperability	17.725	5.000	5.023	3.481	-	3.481	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

As the DoD lead for the integration of Joint All-Domain Command & Control (JADC2) capabilities and development efforts, lead interoperability efforts across DoD and partner nations at the operational and tactical level for mission partner operations, fire support, combat identification (CID), and friendly force tracking (FFT) capabilities. Conduct joint fire support, joint close air support and CID-FFT action plans to fulfill CJCS-directed, General Officer/Flag Officer (GOFO) level responsibilities. Conduct Joint Fire Support Executive Steering Committee (JFS ESC) standardization team accreditation visits to U.S. and partner nation schoolhouses to ensure memorandum of agreement signatories are accomplishing schoolhouse training in compliance with the memoranda.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: Joint Fires C2 Interoperability	5.000	5.023	3.481
Description: These efforts directly support Chairman, Joint Chiefs of Staff (CJCS) guidance to increase interoperability with allies and partners, to more effectively counter trans-regional threats. Supports Chairman's focus area of improving joint warfighting capability and the SECDEF's line of effort to strengthen alliances and attract new partners. Execute Joint Staff-sponsored Bold Quest systems-of-systems interoperability assessment, including integration of cyber capabilities with command and control of conventional and Special Operations Force missions from a multinational perspective at the tactical level. Lead the Joint Fire Support Executive Steering Committee (JFS ESC), composed of Flag/General Officer representatives and supporting staffs from the U.S. Services, Special Operations Command and 21 partner nations. Those nations include NATO nations, Australia, Republic of Korea and key Gulf State allies. Also lead the Combat Identification – Friendly Force Tracking Executive Steering Committee (CID-FFT ESC), focused on more effective and efficient combat operations and reduced potential for friendly fire incidents. FY 2021 Plans: Plan and execute Joint Staff-sponsored Bold Quest 2021 capability demonstration and assessment, focused on interoperability for joint and coalition fires underpinned by Mission Partner Environment (MPE) concepts. Bold Quest data and assessments inform U.S. and Partner Nation investment in multiple capability areas: combat identification, friendly force tracking, digitally aided close air support and fires, integrated air and missile defense (Mode 5 Identify Friend or Foe), coalition intelligence surveillance and reconnaissance, integrated interoperable simulations, and cyber. These efforts directly support the National Military Strategy, the CJCS' global integration objectives and the Combatant Commanders conventional and SOF international engagement programs. Continue leading accreditation visits of current JFS ESC member programs and provide staff assistance visits for development of			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	Project (Number/Name) 003 / <i>Joint Fires C2 Interoperability</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
close air support-related training and certification programs. Continue leading the Combat Identification Friendly Force Tracking (CID-FFT) Executive Steering Committee (ESC) and Joint Fire Support Executive Steering Committee (JFS ESC) in order to address capability shortfalls/gaps, analyze and recommend integrated joint and coalition solutions to warfighter issues. FY 2022 Plans: Plan and execute Joint Staff-sponsored Bold Quest 2022 capability demonstration and assessment, focused on interoperability for joint and coalition fires underpinned by Mission Partner Environment (MPE) concepts. Bold Quest data and assessments inform U.S. and Partner Nation investment in multiple capability areas: combat identification, friendly force tracking, digitally aided close air support and fires, integrated air and missile defense (Mode 5 Identify Friend or Foe), coalition intelligence surveillance and reconnaissance, integrated interoperable simulations, and cyber. These efforts directly support the National Military Strategy, the CJCS' global integration objectives and the Combatant Commanders conventional and SOF international engagement programs. Continue leading accreditation visits of current JFS ESC member programs and provide staff assistance visits for development of close air support-related training and certification programs. Continue leading the CID-FFT ESC and JFS ESC in order to address capability shortfalls/gaps, analyze and recommend integrated joint and coalition solutions to warfighter issues. FY 2021 to FY 2022 Increase/Decrease Statement: Minor programmatic adjustments.			
Accomplishments/Planned Programs Subtotals		5.000	5.023
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
Biannual review of C4/Cyber resources includes an examination of the current and future Budget/Spend Plan, Lines of Effort and Acquisition Strategy. The award of a Multi Award Contract (MAC) seeks efficiencies in the performance of requirements for C4/Cyber and Information services, and promotes contractor teaming to provide critical technical and management support. The MAC approach also seeks to reduce the costs of current contract support through the elimination of multiple fees for service contracts, and through the competitive award of contract services.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 The Joint Staff												Date: May 2021			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments						Project (Number/Name) 003 / Joint Fires C2 Interoperability			
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Management and Engineering Technical Services	C/CPFF	Various : Norfolk	17.725	5.000	Oct 2019	5.023	Oct 2020	3.481		-		3.481	-	-	-
Subtotal			17.725	5.000		5.023		3.481		-		3.481	-	-	N/A
			Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			17.725	5.000		5.023		3.481		-		3.481	-	-	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 The Joint Staff			Date: May 2021
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments	Project (Number/Name) 003 / Joint Fires C2 Interoperability	

	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Joint Fires C2 Interoperability																												
Joint Fires C2 Interoperability																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 The Joint Staff		Date: May 2021
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments	Project (Number/Name) 003 / Joint Fires C2 Interoperability

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Joint Fires C2 Interoperability				
Joint Fires C2 Interoperability	1	2020	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 The Joint Staff	Date: May 2021
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support</i>					R-1 Program Element (Number/Name) PE 0603829J / <i>Joint Capability Experimentation</i>							
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	0.000	10.971	11.239	8.444	-	8.444	-	-	-	-	-	-
001: <i>Joint Capability Experimentation</i>	0.000	10.971	11.239	8.444	-	8.444	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The FY2019 National Defense Authorization Act (NDAA) amends the Chairman’s responsibilities to address experimentation on future concepts and the 2018 National Defense Strategy Implementation Guidance directs that rigorous experimentation take place on concepts to ensure Department investments adequately address future requirements as well as those of today. Accordingly, the Joint Staff requires an experimentation capability to analyze and validate priority joint concept required capabilities. The Joint Staff will support the Global Integrated Wargame (GIWG) 21 events to examine the Joint Warfighting Concept (JWC) 2.0 operational logic and identified gaps to support delivery of a tested concept to the Secretary of Defense.

Concept analysis and validation will have a multi-faceted nature to meet the Chairmen’s Title 10 responsibility of, “identifying new joint military capabilities based on advances in technology and concepts of operation, and recommending investments and experiments in such capabilities.” Wargames will assess baseline mission and campaign level outcomes of the concepts as well as identify a tradespace of potential new capabilities. This tradespace of capabilities is further explored with quantitative models and software that identify the most efficient cost and capability tradeoffs to help meet the Title 10 responsibility of “advising the Secretary on new and alternative joint military capabilities, and alternative program recommendations and budget proposals, within projected resource levels.”

The National Defense Strategy directs “early design tradeoffs in the requirements process to increase the speed of delivery.” The Joint Staff approach to tradespace exploration follows that guidance by providing a cost conscious and operationally relevant prioritization tradeoff technique early in the portfolio design process. Using this rigorous prioritization approach, the capability development cycle can efficiently focus resources on more detailed experimentation of specific capabilities to inform the requirements process. The analysis from the experimentation program will be used to provide foundational evidence to directly inform the Joint Military Net Assessment (JMNA), the Chairman’s Program Recommendation (CPR), and ultimately the Defense Planning Guidance for Joint Force development and design.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 The Joint Staff				Date: May 2021	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support		PE 0603829J I Joint Capability Experimentation			
B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	10.971	11.239	11.006	-	11.006
Current President's Budget	10.971	11.239	8.444	-	8.444
Total Adjustments	0.000	0.000	-2.562	-	-2.562
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Total Other Adjustments	-	-	-2.562	-	-2.562
Change Summary Explanation					
Reductions to inflation and other defense wide economic adjustments.					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0603829J / Joint Capability Experimentation				Project (Number/Name) 001 / Joint Capability Experimentation			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
001: Joint Capability Experimentation	0.000	10.971	11.239	8.444	-	8.444	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The FY2019 NDAA amended the Chairman's responsibilities to include experimentation on future concepts. The 2018 National Defense Strategy Implementation Guidance directed rigorous experimentation on concepts as a means to ensure Department investments adequately address future requirements, not just near term. Given this, the Joint Staff must establish an experimentation capability suitable for analysis and validation of priority joint concept required capabilities. The base of experimentation and wargaming will expand through the initial operating capability to full operating capability. This will provide the necessary capacity and capability. The combination will allow the Chairman to identify cost efficient and effective capability tradeoffs. This capability will enable the Chairman to fulfill his Title 10 responsibility, "advising the Secretary on new and alternative joint military capabilities, and alternative program recommendations and budget proposals, within projected resource levels." This capability more fully supports the Chairman's production of the Joint Military Needs Assessment (JMNA), the Chairman's Program Recommendation (CPR) and ultimately the Defense Planning Guidance for Joint Force development and design.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: Joint Capability Experimentation	10.971	11.239	8.444
Description: The FY 2019 NDAA amended the Chairman's responsibilities to address experimentation on future concepts and the 2018 National Defense Strategy Implementation Guidance directed vigorous experimentation take place on concepts to ensure department investments are adequately addressing future requirements as well as those today. The project will deliver analytically rigorous, resource-conscious and operationally-validated portfolio investment strategies for the CJCS to ensure an enduring competitive advantage.			
FY 2021 Plans: The synergized and synchronized way forward accelerates the integration of new concepts and capabilities into the Joint Force by developing a continuously adapting Joint Force Development and Design (JFDD) enterprise that can inform Service force development and design efforts. To facilitate this initiative requires several lines of effort (LOE):			
1) Developing and executing Globally Integrated Exercises (GIE);			
2) Developing and executing a new series of Globally Integrated Wargames (GIWGs) and the associated development of concepts;			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0603829J / <i>Joint Capability Experimenta tion</i>	Project (Number/Name) 001 / <i>Joint Capability Experimentation</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
3) Developing and deploying the Information Technology (IT) architecture to collect and share data and information (i.e. exercises, experimentation, wargaming, analysis) that supports Joint Force Development and Design (JFDD) including Globally Integrated Exercises GIE, Globally Integrated Wargame (GIWG), and Joint Warfighting Concepts; 4) Conducting JFDD Enterprise Integration and Testing to inform key decisions and evaluate GIWGs and other JFDD activities including in the near-term JADC2, Contested Logistics, Global Fires, and Information Advantage; and 5) Employing red teaming at all levels, implementing reforms to Professional Military Education (PME) for JFDD and incorporating emerging concepts into Joint Doctrine. Funding allows for alignment and coordination of disparate activities across the Department and establishes a capability for joint experimentation and wargaming focused on JFDD that will enhance the capability of the Joint Staff to provide the Chairman with sound analysis of the future environment, concepts, and joint capabilities. <i>FY 2022 Plans:</i> Execute joint experimentation and wargaming focused on Joint Force Development and Design (JFDD) that will enhance the capability of the Joint Staff to provide the Chairman with sound analysis of the future environment, concepts, and joint capabilities. <i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> Adjustments for Defense-wide economic assumptions.			
Accomplishments/Planned Programs Subtotals		10.971	11.239
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 2022 The Joint Staff **Date:** May 2021

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605126J <i>I Joint Integrated Air & Missile Defense Organization (JIAMDO)</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	403.934	64.834	50.255	52.671	-	52.671	-	-	-	-	-	-
P001: <i>Core</i>	162.564	10.378	11.544	10.428	-	10.428	-	-	-	-	-	-
P003: <i>Black Dart</i>	34.483	5.500	0.000	0.000	-	0.000	-	-	-	-	-	-
P005: <i>Nimble Fire</i>	111.769	27.077	20.036	19.876	-	19.876	-	-	-	-	-	-
P006: <i>Cruise Missile Combat Identification (CID)</i>	80.118	4.131	4.675	4.433	-	4.433	-	-	-	-	-	-
P007: <i>Homeland Defense Capability</i>	15.000	17.748	14.000	17.934	-	17.934	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Joint Integrated Air and Missile Defense Organization (JIAMDO) is the organization within the Department of Defense chartered to plan, coordinate, and oversee Integrated Air and Missile Defense (IAMD) requirements, joint operational concepts, and operational architectures. As part of the Joint Staff, JIAMDO supports the Chairman in meeting Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the operational community's proponent for requirements and capabilities in IAMD, and is the joint IAMD proponent within the DoD's resource allocation structures. JIAMDO also leads IAMD mission and utility analysis, integrates IAMD within the force protection joint capability area, conducts evaluations, demonstrations of joint IAMD architectures, and provides advocacy for innovative, technically mature, and affordable solutions.

JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of ballistic missile defense of the United States. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review cost, schedule, and performance criteria of Missile Defense Agency missile defense programs, and assesses the validity of those criteria in relation to national and military requirements. At the request of USSTRATCOM and direction of the CJCS, JIAMDO supports USSTRATCOM in the development of the IAMD prioritized capabilities list and the global integrated IAMD assessment and analysis of the Ballistic Missile Defense System. JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues and technical oversight of homeland capability solutions.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 The Joint Staff				Date: May 2021	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support		PE 0605126J I Joint Integrated Air & Missile Defense Organization (JIAMDO)			
B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	64.834	50.255	53.445	-	53.445
Current President's Budget	64.834	50.255	52.671	-	52.671
Total Adjustments	0.000	0.000	-0.774	-	-0.774
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Total Other Adjustments	-	-	-0.774	-	-0.774
Change Summary Explanation					
The \$2.416M increase from \$50.255M (FY021) to \$52.671M (FY2022) is due to increased support for Homeland Defense Capability. Adjustments to travel and inflation.					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)				Project (Number/Name) P001 / Core			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
P001: Core	162.564	10.378	11.544	10.428	-	10.428	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Joint Integrated Air and Missile Defense Organization (JIAMDO) is chartered to plan, coordinate, and oversee Integrated Air and Missile Defense (IAMD) requirements, concepts, and architectures. As part of the Joint Staff, JIAMDO supports the Chairman in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the IAMD proponent for requirements and capabilities within the DoD's resource allocation system. JIAMDO leads IAMD mission and utility analysis, integrates IAMD within the force protection joint capability area, and conducts evaluations of joint IAMD architectures.												
JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of ballistic missile defense of the United States. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review cost, schedule, and performance criteria of Missile Defense Agency missile defense programs. At the request of USSTRATCOM and at the direction of the CJCS, JIAMDO supports USSTRATCOM development of IAMD prioritized capabilities list and the global integrated IAMD assessment and analysis of the Ballistic Missile Defense System. JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues and homeland defense solutions.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2020	FY 2021	FY 2022	
Title: Core									10.378	11.544	10.428	
Description: Provides staff support for JIAMDO operations in the area of ballistic missile defense, air and cruise missile defense, homeland defense, requirements management, combat identification, modeling and simulation, analytical functions and products, senior level briefings, and all travel costs for government and contractor support personnel. Routine functions include performing analyses, demonstrations, and programmatic assessments of technology, operations, requirements, and weapons systems. In coordination with Services and CCMDs, JIAMDO Core funds the definition, assessment, development, and approval of Joint IAMD operational concepts, operational architectures, and capability requirements. These assessments guide the Department's joint, interagency, integrated and net-centric IAMD. JIAMDO Core provides funding to:												
1. Conduct and integrate joint studies, simulations, war games, force resource allocation, and interoperability initiatives.												
2. Manage relevant Congressional interaction and CCMD interface.												
3. Directly support and sponsor homeland air surveillance-related demonstration and analysis activities.												

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff			Date: May 2021		
Appropriation/Budget Activity 0400 / 6		R-1 Program Element (Number/Name) PE 0605126J / <i>Joint Integrated Air & Missile Defense Organization (JIAMDO)</i>		Project (Number/Name) P001 / <i>Core</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2020	FY 2021	FY 2022
4. Manage the Integrated Air and Missile Defense (IAMD) Working Group and co-chair the Protection Functional Capabilities Board focusing CCMD, Joint Staff, and Service collaboration efforts to generate joint concepts and develop the IAMD architecture and roadmap. JIAMDO Core enables strategic planning development, security, travel, and other support activities. Funding pays for: contracted Systems Engineering and Technical Assistance (SETA) support for Air & Cruise Missile Defense (ACMD), Ballistic Missile Defense (BMD), Homeland Air Security (HAS) strategic planning, studies & analysis, combat ID, modeling & simulation. Additionally, the JIAMDO Core budget funds daily on-site security management personnel to meet DoD, National Industrial Security Program Operating Manual (NISPOM), and other security regulations, for all administrative and support functions related to higher security classifications, as well as basic office supplies and furniture, and classified/unclassified data connections. FY 2021 Plans: Complete Phase II of the Homeland Defense Design and begin work on Phase III. Expand efforts to develop joint integrated air and missile defense (IAMD) requirements solutions. With the completion of the Engagement Coordination initial capabilities document (ICD) in mid FY 2020, continue to support solutions efforts with Missile Defense Agency (MDA) and Services for the Planning Capabilities ICD. Provide support to DISA for Networks Management Capabilities ICD. Ensures the solutions efforts support the Joint Requirements Oversight Council (JROC) validated capability requirements documents (ICDs). Refresh the IAMD Operational Architecture, in coordination with CCMDs, and consolidate with Joint Mission Forum initiatives to inform the procurement and integration of new and emerging capabilities. FY 2022 Plans: Expand efforts to develop joint integrated air and missile defense (IAMD) requirements solutions. With the completion of the Engagement Coordination initial capabilities document (ICD) in mid FY 2020, continue to support solutions efforts with Missile Defense Agency (MDA) and Services for the Planning Capabilities ICD. Provide support to DISA for Networks Management Capabilities ICD. Ensures the solutions efforts support the Joint Requirements Oversight Council (JROC) validated capability requirements documents (ICDs). FY 2021 to FY 2022 Increase/Decrease Statement: Adjustments to inflation and amount of travel.					
Accomplishments/Planned Programs Subtotals			10.378	11.544	10.428
C. Other Program Funding Summary (\$ in Millions)					
N/A					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)	Project (Number/Name) P001 / Core
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff Date: May 2021

Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)				Project (Number/Name) P003 / Black Dart			
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
P003: <i>Black Dart</i>	34.483	5.500	0.000	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Integrated Air and Missile Defense Organization (JIAMDO) is chartered to plan, coordinate, and oversee Integrated Air and Missile Defense (IAMD) requirements, concepts, and architectures. As part of the Joint Staff, JIAMDO supports the Chairman in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the IAMD proponent for requirements and capabilities within the DoD's resource allocation system. JIAMDO leads IAMD mission and utility analysis, integrates IAMD within the force protection joint capability area, and conducts evaluations of joint IAMD architectures.

JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of ballistic missile defense of the United States. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review cost, schedule, and performance criteria of Missile Defense Agency missile defense programs. At the request of USSTRATCOM and at the direction of the CJCS, JIAMDO supports USSTRATCOM development of IAMD prioritized capabilities list and the global integrated IAMD assessment and analysis of the Ballistic Missile Defense System. JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues and homeland defense solutions.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: Black Dart Counter Unmanned Aircraft Systems Technology Demonstration Description: Provides funding to support administration and execution of Black Dart demonstrations. Black Dart is a unique joint, interagency demonstration focusing on rapid development and implementation of Counter - Unmanned Aircraft Systems (C-UAS) technology from readily-available commercial and governmental products. Objectives include: 1. Execute live-fly, live-fire C-UAS technology demonstration to assess and validate existing and emerging Integrated Air and Missile Defense (IAMD) capabilities. 2. Present emerging solutions to inform requirements decision-making. 3. Identify and develop IAMD operational concepts, system interoperability, and operational architectures for the C-UAS mission set. 4. Advocate for C-UAS capabilities and affordable, integrated solutions.	5.500	0.000	-

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605126J / <i>Joint Integrated Air & Missile Defense Organization (JIAMDO)</i>	Project (Number/Name) P003 / <i>Black Dart</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
<i>FY 2021 Plans:</i> Black Dart mission moved to DTRA in 2021.			
<i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> Black Dart mission moved to DTRA in 2021.			
Accomplishments/Planned Programs Subtotals		5.500	0.000
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)				Project (Number/Name) P005 / Nimble Fire			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
P005: Nimble Fire	111.769	27.077	20.036	19.876	-	19.876	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Joint Integrated Air and Missile Defense Organization (JIAMDO) is chartered to plan, coordinate, and oversee Integrated Air and Missile Defense (IAMD) requirements, concepts, and architectures. As part of the Joint Staff, JIAMDO supports the Chairman in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the IAMD proponent for requirements and capabilities within the DoD’s resource allocation system. JIAMDO leads IAMD mission and utility analysis, integrates IAMD within the force protection joint capability area, and conducts evaluations of joint IAMD architectures.												
JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of missile defense of the United States. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review cost, schedule, and performance criteria of Missile Defense Agency missile defense programs. At the request of USSTRATCOM and at the direction of the CJCS, JIAMDO supports USSTRATCOM development of IAMD prioritized capabilities list and the global integrated IAMD assessment and analysis of the Ballistic Missile Defense System. JIAMDO supports the USSTRATCOM missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues and homeland defense solutions.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2020	FY 2021	FY 2022	
Title: JIAMDO Nimble Fire									27.077	20.036	19.876	
Description: Nimble Fire is the Department’s only IAMD operator-in-the-loop modeling and simulation capability supporting the Chairman’s top five critical joint IAMD capabilities: wide-area surveillance and engagement quality tracking, pre-launch interdiction, non-kinetic post-launch capabilities, ballistic missile discrimination, and increased weapons ranges and lethality. Nimble Fire events generally explore joint IAMD capabilities and concepts in the FYDP plus two timeframe. The events combine experienced operators from the tactical communities, virtual simulations accredited by the program offices, current and future advanced capabilities, an integrated air, ballistic and cruise missile threat, and informed scenarios based on the Department’s analytical agenda and CCMD operational plans. JIAMDO brings together stakeholders across the engineering, analytical, and tactical communities to assess Joint interoperability of Service and MDA programs of record, explore concepts of employment, inform tactics, techniques and procedures and concepts of operation, provide insights that help shape CCMD integrated priorities and future operational plans, and inform senior leader acquisition and requirements decisions.												
FY 2021 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605126J / <i>Joint Integrated Air & Missile Defense Organization (JIAMDO)</i>	Project (Number/Name) P005 / <i>Nimble Fire</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
Execute two Nimble Fire events in support of the Combatant Commands, the Services, and Missile Defense Agency (MDA). Continue the upgrades started in FY 2020 to improve EW and multi-domain modeling & simulation capabilities at the Virtual Warfare Center. Multi-domain primarily refers to space, attack or offensive operations, cyber effects and unmanned systems. <i>FY 2022 Plans:</i> Execute two Nimble Fire events in support of the Combatant Commands, the Services, and MDA. Continue upgrades to improve EW and multi-domain modeling & simulation capabilities at the Virtual Warfare Center. Multi-domain primarily refers to space, attack or offensive operations, cyber effects and unmanned systems. <i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> Adjustments to inflation, travel, and other defense wide economic assumptions.			
Accomplishments/Planned Programs Subtotals		27.077	20.036
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)				Project (Number/Name) P006 / Cruise Missile Combat Identification (CID)			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
P006: Cruise Missile Combat Identification (CID)	80.118	4.131	4.675	4.433	-	4.433	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Joint Integrated Air and Missile Defense Organization (JIAMDO) is chartered to plan, coordinate, and oversee Integrated Air and Missile Defense (IAMD) requirements, concepts, and architectures. As part of the Joint Staff, JIAMDO supports the Chairman in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the IAMD proponent for requirements and capabilities within the DoD’s resource allocation system. JIAMDO leads IAMD mission and utility analysis, integrates IAMD within the force protection joint capability area, and conducts evaluations of joint IAMD architectures.												
JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of ballistic missile defense of the United States. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review cost, schedule, and performance criteria of Missile Defense Agency missile defense programs. At the request of USSTRATCOM and at the direction of the CJCS, JIAMDO supports USSTRATCOM development of IAMD prioritized capabilities list and the global integrated IAMD assessment and analysis of the Ballistic Missile Defense System. JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues and homeland defense solutions.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2020	FY 2021	FY 2022	
Title: Cruise Missile Combat Identification (CID)									4.131	4.675	4.433	
Description: Establishes joint requirements for emerging national and tactical combat identification technology and advocates for fielding CID technology to frontline weapon systems. Monitors, assesses, and enhances current joint air and cruise missile defense combat ID programs.												
FY 2021 Plans: Details of this program are classified and will be provided under a separate cover.												
FY 2022 Plans: Details of this program are classified and will be provided under a separate cover.												
FY 2021 to FY 2022 Increase/Decrease Statement: Reduction due to less travel and inflation.												
Accomplishments/Planned Programs Subtotals									4.131	4.675	4.433	

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)	Project (Number/Name) P006 / Cruise Missile Combat Identification (CID)
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)				Project (Number/Name) P007 / Homeland Defense Capability			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
P007: Homeland Defense Capability	15.000	17.748	14.000	17.934	-	17.934	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

A. Mission Description and Budget Item Justification
This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
Title: Homeland Defense Capability Description: Develop Homeland Defense Capability FY 2021 Plans: Perform technology development efforts. Further details are reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. FY 2022 Plans: Perform technology development efforts. Further details are reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. FY 2021 to FY 2022 Increase/Decrease Statement: The increase reflects increased support for Homeland Defense Capability.	17.748	14.000	17.934
Accomplishments/Planned Programs Subtotals	17.748	14.000	17.934

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 2022 The Joint Staff	Date: May 2021
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Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support	R-1 Program Element (Number/Name) PE 0204571J / Joint Staff Analytical Support
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	55.225	9.216	3.058	0.977	-	0.977	-	-	-	-	-	-
P001: Future Joint Force Development	24.968	4.216	3.058	0.977	-	0.977	-	-	-	-	-	-
P003: GFM DI Enterprise Force Structure (EFS) Integration	30.257	5.000	0.000	0.000	-	0.000	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Joint Staff Analytical Support (JSAS) family of programs provide defense analytical support capabilities for the Joint Staff and Combatant Commands (CCMDs). JSAS encompasses tools and infrastructure required to conduct analyses and formulate results that assist the Chairman in fulfilling his statutory responsibilities. Key deliverables provided by JSAS include development and implementation of Joint Concepts, concepts of operation, concepts of employment, wide-ranging force structure assessments, course of action development for the joint force environment, analyses and studies for joint concept driven, threat-informed capability development approach to joint force development and design to aid in decision-making, and other analysis efforts to implement timely, low-cost joint force development initiatives.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	9.216	3.058	3.082	-	3.082
Current President's Budget	9.216	3.058	0.977	-	0.977
Total Adjustments	0.000	0.000	-2.105	-	-2.105
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Total Other Adjustments	-	-	-2.105	-	-2.105

Change Summary Explanation

Reduction to travel funds, compliance with defense wide economic assumptions and other adjustments.

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff **Date:** May 2021

Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0204571J / Joint Staff Analytical Support				Project (Number/Name) P001 / Future Joint Force Development			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
P001: <i>Future Joint Force Development</i>	24.968	4.216	3.058	0.977	-	0.977	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Staff Analytical Support (JSAS) program supports the Chairman's Title 10 responsibility for the analytical support, management and development of future-based joint concepts. These concepts include concepts of operations and employment that advance Joint Force operational effectiveness and enable the introduction and incorporation of new capabilities. The Joint Concepts program supports the Chairman's responsibility to express a vision for the future joint force; addressing operational problems on a 20-year horizon; identifying joint force development and design implications; and identifying capabilities required to mitigate and solve future joint warfighting gaps. The goal is to enable investment decisions balancing near and long term risk. Threat-informed joint concepts drive capability development and promote horizontal integration for force development and design across the Services, Combatant Commands, Defense agencies, OSD and Joint Staff. Key deliverables include:

Family of Joint Concepts (FOJC): Based on the National Military Strategy (NMS) and providing operational and joint functional approaches to future adversary based challenges or opportunities. These concepts prioritize against near peer competitors and pacing threats. The FOJC drives capability development and alternative approaches to operating in support of a globally integrated force benchmarked against current and long-term pacing threats. The FOJC includes the Capstone Concept for Joint Operations, Joint Warfighting Concept, and Joint Supporting Concepts that address joint warfighting functions, Concepts of Operation.

Capstone Concept for Joint Operations (CCJO): Provides the Chairman's vision for future joint operations and establishes aim points for the development of the future Joint Force. The key theme is globally integrated operations and directs joint concept driven, threat-informed capability to regain competitive advantage.

Joint Warfighting Concept (JWC): Identifies innovative and alternative approaches and design options for the employment of the Joint Force out to 2030.

Concepts of Operations (CONOPS): Describe how the actions of the joint force components and supporting organizations are integrated, synchronized, and phased to accomplish a specific mission or function within the construct of a future scenario. CONOPS support evaluation of new ways of operating, future force posture mix, advanced capabilities, and authorities in exercises, wargames, and experiments.

Joint Operating Environment (JOE) and the Gamechangers report: Developed in partnership with DIA, this report describes the future security environment and projects the implications of change for the Joint Force. The documents describe the circumstances that may alter the security environment and explores how the intersection and interaction of these changes might impact the character of war in the future. They provide a framework to think about the full range of Joint Force missions and how they may evolve over time in order to support development of threat-based future Joint concepts and concepts of operations.

Allies and Partners Force Development Division's (APFD) mission is to ensure collaboration and integration throughout the spectrum of joint force development. This ensures both the Joint Staff, its allies, and partners can invest in initiatives and conduct interoperable and seamless operations to meet the objectives in the NMS.

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0204571J / <i>Joint Staff Analytical Support</i>	Project (Number/Name) P001 / <i>Future Joint Force Development</i>	
The Multinational Capability Development Campaign (MCDC) is an initiative led by the United States Joint Staff, J-7, and partners with 23 countries and international organizations. It is designed to develop and assess non-materiel force development solutions and close capability gaps within multi-national operations.			
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
Title: Future Joint Force Development Description: Future joint force development provides analytic support required to develop future-based joint concepts. The goal is to enable investment decisions balancing near and long term risk. Threat-informed joint concepts drive capability development and promote horizontal integration for force development and design across the Services, Combatant Commands, Defense agencies, OSD and Joint Staff. FY 2021 Plans: Execute the Chairman's Joint Concepts Program. Support the execution of the FY 2021 Globally Integrated War Game. Complete Joint Warfighting Concept and Joint Supporting Concepts. Continue global CONOP development to support evaluation of joint concepts in exercises, war games, and experimentation. In partnership with DIA, begin development of the next Gamechangers report and continue to lead the futures community of interest. FY 2022 Plans: Execute the Chairman's Joint Concepts Program. Support the execution of the FY 2022 Globally Integrated War Game. Complete Joint Warfighting Concept and Joint Supporting Concepts. Continue global CONOP development to support evaluation of joint concepts in exercises, war games, and experimentation. In partnership with DIA, begin development of the next Gamechangers report and continue to lead the futures community of interest. FY 2021 to FY 2022 Increase/Decrease Statement: Reductions for less travel, and other adjustments.	4.216	3.058	0.977
Accomplishments/Planned Programs Subtotals	4.216	3.058	0.977
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0204571J / Joint Staff Analytical Support				Project (Number/Name) P003 / GFM DI Enterprise Force Structure (EFS) Integration			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
P003: GFM DI Enterprise Force Structure (EFS) Integration	30.257	5.000	0.000	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Global Force Management (GFM) data initiative Enterprise Force Structure (EFS) effort provides the next steps for GFM mission application enhancements required to balance global force demand against available military force. This complex task requires technologies that provide integrated information obtained by linking force structure quantitative data (derived from the GFM organizational servers) to qualitative data of Capability, Readiness, Availability and Employment/Location data (C.R.A.E.) resident in GFM mission applications and associated data bases. The Joint Staff is responsible for GFM allocation and will employ a strategy for efficiently providing Enterprise Force Structure (EFS) data utility.

DoD must meet national military objectives that range from large force scenarios to small-scale activities. Our adversaries demonstrate the ability to readily transition from non-kinetic to kinetic effects. Consequently, Information Technology (IT) superiority, capabilities, and recognition of associated vulnerabilities are an operational imperative. Yet, warfighters, strategic planners and GFM decision makers are unable to exchange information in a manner that rapidly and accurately enables force sourcing activities to support SecDef decisions. The Joint Staff is mandated to utilize the Service's organizational server EFS data to enhance managing, assessing, and displaying the health and worldwide disposition of U.S. Forces. Key deliverables include incrementally developed, operationally realistic capability enhancements focused on resource-informed planning and GFM sourcing functionality required by numerous Joint Staff requirements documents.

The Joint Staff Analytical Support (JSAS) enterprise force structure data integration efforts enables Project ORION: a Global Laydown Server and a Joint Force Capabilities Catalog along with functional applications that support a global visibility capability. This capability enhances resource-informed planning, global force management and joint deployment. Global visibility capability also supports future force integration and concept implementation needed to support timely and dynamic response to Combatant Commanders' contingency requirements. Project ORION creates a technical environment that enables rapid integration of the JOPES replacement with remaining GFM data that supports planning and execution of U.S. Military Operations. Project Orion provides operational force structure and the means to allocate and attach units. This capability is the cornerstone for fulfilling the CJCS-directed requirement to integrate force planning, support planning, and deployment planning and execution of military operations. The ORION environment supports all variants of planning and execution processes by providing portal access to authoritative data aggregated in the Global Laydown Servers and associated display of force capabilities, readiness, employment, and availability of the force. This is a cost-effective yet full spectrum approach to support and assist the Chairman in fulfilling his statutory responsibilities while improving current and future joint force management.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
Title: GFM Data Initiative (GFM DI) Enterprise Force Structure Integration (EFS)	5.000	0.000	-

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0204571J / <i>Joint Staff Analytical Support</i>	Project (Number/Name) P003 / <i>GFM DI Enterprise Force Structure (EFS) Integration</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
Description: The GFM DI EFS integration effort requires RDT&E funds to operationalize force structure data from the service's Organizational Servers to actual forces for employment within the purview of allocation and Joint command and control. This GFM DI effort within the Joint Staff Analytical Support (JSAS) family of programs will immediately streamline the SECDEFs "Forces for Unified Commands" memorandum Assignment Tables. RDT&E efforts for assignment and apportionment functions ended in FY 2015 with the declaration of Full Operation Capability (FOC) for the Automated Global Force Management Tool. GFM DI planned milestones must be met to enable a global visibility capability. GFM applications managed by the Joint Staff are used by the JSAS family of programs. FY 2021 Plans: Migrated program to sustainment, funded by the Operation and Maintenance appropriation. FY 2021 to FY 2022 Increase/Decrease Statement: Migrated funding to sustainment, funded by O&M.			
Accomplishments/Planned Programs Subtotals		5.000	0.000
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 The Joint Staff	Date: May 2021
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Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support	R-1 Program Element (Number/Name) PE 0303166J / Support to Information Operations (IO) Capabilities											
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	36.447	0.553	0.545	0.000	-	0.000	-	-	-	-	-	-
001: Joint Information Operations Range	36.447	0.553	0.545	0.000	-	0.000	-	-	-	-	-	-

Note

Joint Staff divests the Joint Information Operations Range to the Air Force in FY 2022.

A. Mission Description and Budget Item Justification

The Joint Information Operations Range (JIOR) provides DoD with a closed-loop network that forms a global live-fire information operations range complex. JIOR uses encrypted tunneling over existing transport networks to conduct mission rehearsal, training, testing, concept development and experimentation in support of Information Operations (IO), Electronic Warfare (EW), Offensive Cyber Operations (OCO), Defensive Cyber Operations (DCO), Spectrum Warfare, Space Operations, and Special Operations Forces mission areas in a realistic threat representative environment. JIOR provides the capability to train and certify Cyber Mission Forces on the full spectrum of cyber weapons/capabilities without risk of observation or fratricide. JIOR is accredited by DIA for operations at Unclassified through Top Secret-Special Compartment Information (TS-SCI) in a Multiple Independent Levels of Security (MILS) environment. JIOR is approved for use by Special Access Programs (SAP), Special Access Required Programs (SAR), and for Special Technical Operations (STO). JIOR provides Combatant Commands, Services and Agencies (C/S/A's) and key allied partners the ability to test deployment and gain insights into advanced cyberspace and Electronic Warfare (EW) capabilities under current and future operational environments. JIOR integrates available cyberspace ranges with the training/test communities providing access to low density/high demand test and training resources including critical infrastructure, cyber targets, internet traffic, and opposing forces. JIOR supports Presidential policy and CJCS mandates for training, certification, and recertification of 6000+ cyber mission forces and DoD/Interagency cyber vulnerability assessments. C/S/A's conduct hundreds of mission rehearsal, training, testing, and experimentation events on the JIOR annually.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	0.553	0.545	0.545	-	0.545
Current President's Budget	0.553	0.545	0.000	-	0.000
Total Adjustments	0.000	0.000	-0.545	-	-0.545
• Congressional General Reductions	0.000	-			
• Congressional Directed Reductions	0.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	-			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.545	-	-0.545

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 The Joint Staff		Date: May 2021
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support		R-1 Program Element (Number/Name) PE 0303166J / Support to Information Operations (IO) Capabilities
<u>Change Summary Explanation</u> Joint Information Operations Range transfers from the Joint Staff to Air Force in FY 2022.		

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0303166J / Support to Information Operations (IO) Capabilities				Project (Number/Name) 001 / Joint Information Operations Range			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
001: Joint Information Operations Range	36.447	0.553	0.545	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Joint Information Operations Range transfers from the Joint Staff to Air Force in FY 2022.												
A. Mission Description and Budget Item Justification The Joint Information Operations Range (JIOR) provides DoD with a closed-loop network that forms a global live-fire information operations range complex. JIOR uses encrypted tunneling over existing transport networks to conduct mission rehearsal, training, testing, concept development and experimentation in support of Information Operations (IO), Electronic Warfare (EW), Offensive Cyber Operations (OCO), Defensive Cyber Operations (DCO), Spectrum Warfare, Space Operations, and Special Operations Forces mission areas in a realistic threat representative environment. JIOR provides the capability to train and certify Cyber Mission Forces on the full spectrum of cyber weapons/capabilities without risk of observation or fratricide. JIOR is unique within the Department of Defense and is accredited by DIA for operations at Unclassified through Top Secret-Special Compartment Information (TS-SCI) in a Multiple Independent Levels of Security (MILS) environment. JIOR is approved for use by Special Access Programs (SAP), Special Access Required Programs (SAR), and for Special Technical Operations (STO). JIOR provides Combatant Commands, Services and Agencies (C/S/A's) and key allied partners the ability to test deployment and collaboratively gain insights into advanced cyberspace and Electronic Warfare (EW) capabilities under current and future operational environments. JIOR integrates available cyberspace ranges with the training/test communities providing access to low density/high demand test and training resources including critical infrastructure, cyber targets, internet traffic, and opposing forces. JIOR supports Presidential policy and CJCS mandates for training, certification, and recertification of 6000+ cyber mission forces and DoD/Interagency cyber vulnerability assessments. C/S/A's conduct hundreds of mission rehearsal, training, testing, and experimentation events on the JIOR annually.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2020	FY 2021	FY 2022	
Title: Joint Information Operations Range									0.553	0.545	0.000	
Description: The Joint Information Operations Range (JIOR) is a closed-loop network that forms a live-fire, distributed range complex utilizing encrypted tunneling to conduct mission rehearsal, training, testing, and experimentation in a threat representative environment to support Information Operations (IO), Cyberspace, Electronic Warfare (EW), Spectrum Warfare, Space Operations and Special Operations Forces (SOF) mission areas.												
FY 2021 Plans: Continue testing and evaluating new, cutting edge technologies and refining networking configurations for optimization of the JIOR. Refine network automation strategy.												
FY 2022 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0303166J / <i>Support to Information Operations (IO) Capabilities</i>	Project (Number/Name) 001 / <i>Joint Information Operations Range</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
Joint Information Operations Range transfers from the Joint Staff to Air Force in FY 2022.			
<i>FY 2021 to FY 2022 Increase/Decrease Statement:</i>			
Joint Information Operations Range transfers from the Joint Staff to Air Force in FY 2022.			
Accomplishments/Planned Programs Subtotals		0.553	0.545
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
Joint Information Operations Range transfers from the Joint Staff to Air Force in FY 2022.			
D. Acquisition Strategy			
N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 The Joint Staff	Date: May 2021
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Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support	R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - No n MHA
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	42.653	40.073	31.125	29.530	-	29.530	-	-	-	-	-	-
701: Air Force Joint National Training Capability (JNTC)	2.917	2.811	2.869	2.431	-	2.431	-	-	-	-	-	-
758: Joint National Training Capability (JNTC)	29.584	27.293	22.375	23.157	-	23.157	-	-	-	-	-	-
769: Joint Knowledge Development & Distribution Capability (JKDDC)	1.126	1.608	1.108	0.826	-	0.826	-	-	-	-	-	-
772: Navy Joint National Training Capability (JNTC)	3.260	3.041	3.042	2.578	-	2.578	-	-	-	-	-	-
773: Joint Interoperability and Data Link Training Center (JID-TC)	1.845	1.419	1.095	0.000	-	0.000	-	-	-	-	-	-
774: USMC Joint National Training Capability (JNTC)	0.921	0.901	0.636	0.538	-	0.538	-	-	-	-	-	-
775: Advanced Distributed Learning (ADL)	3.000	3.000	0.000	0.000	-	0.000	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

These programs support readiness of the joint force by creating a joint training environment to replicate the complex and changing operational environment. These investments directly support defense strategic guidance, Joint Operational Training Infrastructure strategy, and enhance joint warfighting readiness by building training capabilities that support the operational readiness of the joint force. The elements associated with this coordinated effort consist of:

JNTC: The mission of the Joint National Training Capability (JNTC) program is to advance joint capabilities and interoperability by concentrating on emerging joint training requirements through collective training using a managed set of globally distributed capabilities and activities. The program resources Service and Special Operations Forces joint training to improve interoperability and create realistic tactical and operational joint training. JNTC enables joint training for Combatant Commands and Services by developing joint training content and ensuring global distributed access. JNTC enabling capabilities support Services and USSOCOM requirements to provide trained and ready forces in support of Combatant Command operational requirements. The program will support the Joint Operational Training Infrastructure (JOTI). This program focuses efforts on improving readiness and create a ready surge force consistent with Chairman's guidance.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 The Joint Staff		Date: May 2021
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support	R-1 Program Element (Number/Name) PE 0804768J I COCOM Exercise Engagement and Training Transformation (CE2T2) - No n MHA	
JKDDC: Joint Knowledge Development & Distribution Capability (JKDDC) Joint Knowledge Online (JKO) is the program of record for online joint training that implements and operationalizes the OSD training transformation JKDDC. JKO directly supports the CE2T2 program by developing, delivering, tracking, reporting, and supporting online training for Combatant Command exercises; Combatant Command required training; doctrinally based Joint Operations Core Curriculum; multinational, coalition, interagency training; OSD required training; and administration of the Senior Enlisted Joint Professional Military Education program. JKO expends RDT&E funding for leading edge technology review, market research, and integration to directly enhance various aspects of the training capability required to support Combatant Commanders, CE2T2 program objectives, and the Chairman's joint training guidance. JKO satisfies all requirements necessary to provide CE2T2 stakeholders with a distributed learning capability and access to web-based training content, learning resources, and distributed online training tools. Air Force Joint National Training Center (JNTC): Air Force JNTC funding provides a focused upgrade to develop models for space-based and cyber capabilities for integration into the Joint Live, Virtual, and Constructive (JLVC) environment as well supporting development of cross-domain solutions. Additionally, the Air Force invests in development of capabilities to enhance the rigor and fidelity of training for live and virtual members of joint training audiences. Navy JNTC: These funds enable Navy to develop unique maritime capabilities that integrate JLVC elements into a seamless joint training environment. The Navy program activities include conducting research, development, and integration of a common, realistic, joint and coalition, operational to tactical level training architecture to deliver individual and collective constructive joint training for use in Fleet Synthetic Training (FST) events, CCDR exercises, Ballistic Missile Defense Exercises (BMDEX) certification events, and BMD at Sea training events in support of CCDR's training, deployment certification and operational requirements. JID-TC: Joint Interoperability and Data Link Training Center (JID-TC) supports 35 annual schoolhouse interoperability courses and up to six CAPSTONE Joint Interface Control Officer (JICO) courses tied to various Combatant Command (CCMD) joint exercises. JID-TC trains CCMD, Services and partner nations' operations center personnel on interoperability planning tasks required during contingencies and exercises in emerging mission areas such as joint fires, net enabled weapons, remotely piloted aircraft, integrated air and missile defense, and contested operations including secure internet with Link-16/TDL equipped major weapon systems and smart bombs. Marine Corps JNTC: These funds provide USMC stability and risk reduction to a variety of ongoing joint efforts focused on improving the fidelity and realism of training simulation systems that prepare Marine Air Ground Task Force (MAGTF) units for deployment in support of CCMD operations. In support of the Commandant's planning guidance, the Marine Corps will continue to improve performance and support of the MAGTF Tactical Warfare Simulation in the areas of the JLVC-Multi-Resolution Federation (MRF) Bridge, common database terrain data ingestion, and JLVC interoperability. It also provides a single source training environment capability enabling users to select single or multiple play boxes (terrain data sets) for training simulation systems. In addition to developing an exercise planning, design, implementation, execution, and control tool, it also enhances pattern of life and indigenous population modular service enabling exercise designers' ability to rapidly build new scenarios and incorporate human geography elements into training scenarios. ADL: The Advanced Distributed Learning (ADL) initiative supports innovation and provides policy oversight to help the Services, Joint Staff, and partner agencies deliver training and education more efficiently and cost effectively. ADL provides policy oversight and coordination across DoD, coalition partners, and other Federal agencies for distributed learning. This oversight supports interagency interoperability and promotes personnel readiness, ensuring the right people receive the right training at the right time. This program transferred to OSD P&R in FY21.		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 The Joint Staff				Date: May 2021	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support		PE 0804768J I COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA			
B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	40.073	31.125	32.695	-	32.695
Current President's Budget	40.073	31.125	29.530	-	29.530
Total Adjustments	0.000	0.000	-3.165	-	-3.165
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Total Other Adjustments	-	-	-3.165	-	-3.165
Change Summary Explanation					
Reductions for travel, and other adjustments.					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA				Project (Number/Name) 701 / Air Force Joint National Training Capability (JNTC)			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
701: Air Force Joint National Training Capability (JNTC)	2.917	2.811	2.869	2.431	-	2.431	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Air Force JNTC funding provides a focused upgrade to develop models for space-based and cyber capabilities for integration into the Joint Live, Virtual, and Constructive (JLVC) environment as well as supporting development of cross-domain solutions. Additionally, the Air Force invests in development of capabilities to enhance the rigor and fidelity of training for live and virtual members of joint training audiences.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2020	FY 2021	FY 2022	
Title: Air Force Joint National Training Capability (JNTC)									2.811	2.869	2.431	
Description: Air Force continues to develop joint enablers that drive realistic/effective training in contested and degraded environments across the CE2T2 enterprise. These capability enhancements provide a thinking and reactive Opposing Force (OPFOR) to challenge and engage both live and virtual Blue Forces using a combination of kinetic and non-kinetic cyber capabilities. Additionally, it continues to build upon prior investments in the cyber and space domains by improving fidelity of synthetic environments, ability to portray and control blue, red, and neutral entities and effects, interoperability with other Service, joint, and JLVC federation models and simulations, and support of CE2T2 mission partners. It also builds on prior investments in the One War Training System (OWTS) to enhance exercise control, safety, and feedback to training audiences in blended live and synthetic air and land domains.												
FY 2021 Plans:												
1. Develop capability for live OPFOR surface-to-air threats to engage virtual as well as live BLUFOR aircraft.												
2. Sustain development of and enhance new capabilities for integration of the cyber simulator environment generator and "blue" cyber effects simulation. Continue to add functionality to the Air and Space Collaborative Environment Information Operations Suite (ACE-IOS) Modeling and Simulation (M&S) suite. Further development to allow live space aggressor forces to interact with a virtual constructive environment replicating threats to the space environment.												
3. Sustain space simulation improvements to model improved fidelity of space entities and adversary effects, enhance exercise control and OPFOR capabilities, and improve space simulation interoperability with CE2T2 mission partners.												

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA	Project (Number/Name) 701 / Air Force Joint National Training Capability (JNTC)	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
4. Enhance OWTS feedback capability to training audiences by adding an automated near-real time kill removal capability against OPFOR ground targets. FY 2022 Plans: 1. Develop capability for live OPFOR surface-to-air threats to engage virtual as well as live Blue Force (BLUFOR) aircraft. 2. Sustain development of and enhance new capabilities for integration of the cyber simulator environment generator and "blue" cyber effects simulation. Continue to add functionality to the Air and Space Collaborative Environment Information Operations Suite (ACE-IOS) Modeling and Simulation (M&S) suite. Further development to allow live space aggressor forces to interact with a virtual constructive environment replicating threats to the space environment. 3. Sustain space simulation improvements to model improved fidelity of space entities and adversary effects, enhance exercise control and OPFOR capabilities, and improve space simulation interoperability with CE2T2 mission partners. 4. Enhance OWTS feedback capability to training audiences by adding an automated near-real time kill removal capability against OPFOR ground targets. FY 2021 to FY 2022 Increase/Decrease Statement: Decrease in this program as funds were realigned to support the Secretary of Defense's Joint Training Infrastructure Goals in other CE2T2 programs.			
Accomplishments/Planned Programs Subtotals		2.811	2.869
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA				Project (Number/Name) 758 / Joint National Training Capability (JNTC)			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
758: Joint National Training Capability (JNTC)	29.584	27.293	22.375	23.157	-	23.157	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Investment in the Joint National Training Capability (JNTC) program enables Service and Combatant Commands to train as they operate. The requested funding continues to modernize joint training capabilities into a single integrating architecture aligned to DoD Chief Information Officer IT mandates. Funding supports development of cloud-enabled modular training application services within an Open Systems Architecture (OSA). JNTC focuses on delivering operationally relevant training environments and respond to changes in the global security landscape and the warfighter's operational environment. JNTC enables the Department of Defense to be responsive to the warfighters' changing operational concepts, threat environments, and best practices. Funds support improved relevance and realism of training by providing capabilities that replicate the contemporary and future operating environment. This program will adapt the goals listed in the Joint Operational Training Infrastructure (JOTI).

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: Joint National Training Capability (JNTC)	27.293	22.375	23.157
Description: JNTC provides the technical standards, architecture, and development processes required to integrate/link joint training programs. Funding supports the technical integration of Joint and Service models and simulations with the Joint, Live, Virtual, Constructive (JLVC) training capabilities. The capabilities enable aggregation of training audiences at the Combatant Command, Joint Task Force, and Component Command headquarter levels. The funding also supports modernization of the Joint Training Environment (JTE) through a Modular Open Systems Architecture (MOSA) approach to include a cloud enabled web accessible Joint Training Tool (JTT) that supports all phases of an exercise (planning, execution, and AAR). JTT will increase warfighter access to semi-automated training enablers within the Joint Training Synthetic Environment (JTSE).			
FY 2021 Plans: 1. Expand use of web-enabled JTT exercise design and planning services as the primary tool supporting Tier 1 and Tier 2 joint training exercise. 2. Conduct "proof of concept" use of web-enabled modular JTT simulation service. Continue planning transition of the JTT as the primary tool supporting all aspects of Tier 1 and Tier 2 joint training exercises where aggregate simulation capabilities are required.			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff			Date: May 2021		
Appropriation/Budget Activity 0400 / 6		R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA	Project (Number/Name) 758 / Joint National Training Capability (JNTC)		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2020	FY 2021	FY 2022
3. Integrate, test, and validate Service and Agency JLVC capabilities.					
4. Enhance joint simulation (within JLVC) to keep pace with operational environment changes (annual requirement).					
5. Support the Joint Operation Training infrastructure goals.					
FY 2022 Plans:					
1. Expand use of web-enabled JTT exercise design and planning services as the primary tool supporting Tier 1 and Tier 2 joint training exercise.					
2. Conduct “proof of concept” use of web-enabled modular JTT simulation service. Continue planning transition of the JTT as the primary tool supporting all aspects of Tier 1 and Tier 2 joint training exercises where aggregate simulation capabilities are required.					
3. Integrate, test, and validate Service and Agency JLVC capabilities.					
4. Enhance joint simulation (within JLVC) to keep pace with operational environment changes (annual requirement).					
5. Support the Joint Operation Training infrastructure goals.					
FY 2021 to FY 2022 Increase/Decrease Statement:					
Increases in FY22 to support the Secretary of Defense’s Joint Training Infrastructure Goals.					
Accomplishments/Planned Programs Subtotals			27.293	22.375	23.157
C. Other Program Funding Summary (\$ in Millions)					
N/A					
Remarks					
D. Acquisition Strategy					
N/A					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA				Project (Number/Name) 769 / Joint Knowledge Development & Distribution Capability (JKDDC)			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
769: Joint Knowledge Development & Distribution Capability (JKDDC)	1.126	1.608	1.108	0.826	-	0.826	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Joint Knowledge Online (JKO) is the DoD unique and authoritative source for online joint training. JKO is tasked to develop a DoD enterprise-wide, joint individual training toolkit of web-enabled individual and small group training products, services, and enabling training technology. Products and services are developed in response to OSD program goals, CJCS high interest training issues, Joint Staff training priorities, and JKO stakeholders (Combatant Commands, Services, Combat Support Agencies, Interagency, and multinational partners) prioritized training requirements. JKO supports a career-long joint learning continuum, joint professional military education, and tailored common training standards to Service members on tasks that are jointly executed. JKO's research and development will improve all components of the Joint Content Management Architecture (JCMA) including:

1. JKO Learning Management System (LMS): Development and enhancement is required to integrate advanced individual and staff training technologies and methodologies with larger scale, collective training exercises, and modernize military training capability with a DoD enterprise-wide online training toolkit. There are currently over 3.6 million registered users of the JKO LMS.
2. JKO Course Builder: JKO's Course Builder is a separate component used as a force multiplier for organizations to develop online content by both internal and external joint enterprise teams. Course Builder mitigates the need to have programmer's code Shareable Content Object Reference Model (SCORM) standards into content with automation that promotes fiscal efficiency as well as operational responsiveness. Course Builder will also support the new development methodology of micro-learning.
3. Small Group Scenario Trainer (SGST) desktop modeling and simulation based training: This JKO capability trains and prepares thousands of military and civilian personnel deploying to Combatant Command theaters of operation prior to serving in their assigned Combined/Joint Task Force (C/JTF) billets. JKO integration of SGST simulation exercise scenarios and prerequisite JKO courses significantly enhance blended learning training support to large-scale, collective training exercises.
4. JKO Virtual Classroom (VClass): JKO's new virtual classroom, or VClass, meets the need for an enhanced distributed learning capability with the introduction of a collaborative learning environment. VClass is a customizable platform within JKO's architecture and will provide JKO elevated users the tools to meet the unique needs of DoD's training and education audience by providing online/blended course support with syllabus, messaging, gradebook, resources, announcements and synchronous instructional forums.
5. JKO mobile training development: Development and enhancements in JKO's new approach to Responsive Design will significantly increase availability and access of web-based joint training content on portable, hand-held platforms (e.g. cell phones and tablets).

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff			Date: May 2021		
Appropriation/Budget Activity 0400 / 6		R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA		Project (Number/Name) 769 / Joint Knowledge Development & Distribution Capability (JKDDC)	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2020	FY 2021	FY 2022
Title: Joint Knowledge Development & Distribution Capability (JKDDC) Description: Joint Knowledge Online (JKO) advance technology initiatives primarily include the JKO Learning Management System (LMS) application, Course Builder, Small Group Scenario Trainer (SGST) desktop modeling and simulation based training capability, Virtual Classroom, and mobile courseware training applications. These capabilities increase access to, and facilitate the training and preparation of hundreds of thousands of military and civilian personnel deploying to Combatant Command (CCMD) theaters of operation prior to serving in their assigned Joint and Combined/Joint Task Force (C/JTF) billets. JKO LMS development and enhancements are required to develop, host, deliver, track, report and support students' completions, progress and survey results more effectively and efficiently. C/JTF "battle staffs" and combatant command (CCMD) personnel will be better trained, as individuals and as staffs, based on SGST, VClass development, and implementation throughout the joint training enterprise. JKO mobile courseware training development via Responsive Design facilitates the global distribution of web-based joint training content on portable, hand-held platforms for DoD personnel. FY 2021 Plans: Continue to integrate and expand the virtual classroom (VClass) open source capability (Sakai) into the Global Content Distribution System (GCDS) and the JKO LMS suite of tools for synchronous (live) and non-synchronous (video-taped) instructor led training as well as a locally developed micro learning technology called the JKO Personal Accelerated Learning Manager (JPALM) leveraging the PERLS methodology offered by ADL. JKO's new VClass capability will provide required enhanced distributed learning (DL) much like today's universities with an expectation of student-to-instructor collaboration; student-to-student collaboration; written assignment evaluation; live instructor response and teaching; and critical thinking exercises and assignments. PERLS delivers self-regulated micro-learning training that is designed to be engaging, usable and practical, allowing individuals to quickly access desired learning content whenever an opportunity arises. As DoD organizations increase training via DL opportunities to mitigate expenses due to decreased funding and personnel, the methodologies of developing and delivering DL must be cutting edge, timely and optimize the learning experience of the joint warfighter. JPALM/PERLS and micro-learning provide that edge and optimization. FY 2022 Plans: Continue to integrate and expand the virtual classroom (VClass) open source capability (Sakai) into the Global Content Distribution System (GCDS) and the JKO LMS suite of tools for synchronous (live) and non-synchronous (video-taped) instructor led training as well as a locally developed micro learning technology called the JKO Personal Accelerated Learning Manager (JPALM) leveraging the PERLS methodology offered by ADL. JKO's new VClass capability will provide required enhanced distributed learning (DL) much like today's universities with an expectation of student-to-instructor collaboration; student-to-student collaboration; written assignment evaluation; live instructor response and teaching; and critical thinking exercises and assignments. PERLS delivers self-regulated micro-learning training that is designed to be engaging, usable and practical,			1.608	1.108	0.826

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA	Project (Number/Name) 769 / Joint Knowledge Development & Distribution Capability (JKDDC)	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
allowing individuals to quickly access desired learning content whenever an opportunity arises. As DoD organizations increase training via DL opportunities to mitigate expenses due to decreased funding and personnel, the methodologies of developing and delivering DL must be cutting edge, timely and optimize the learning experience of the joint warfighter. JPALM/PERLS and micro- learning provide that edge and optimization. allowing individuals to quickly access desired learning content whenever an opportunity arises. As DoD organizations increase training via DL opportunities to mitigate expenses due to decreased funding and personnel, the methodologies of developing and delivering DL must be cutting edge, timely and optimize the learning experience of the joint warfighter. JPALM/PERLS and micro- learning provide that edge and optimization. FY 2021 to FY 2022 Increase/Decrease Statement: Decreases in FY22 to support the Secretary of Defense's Joint Training Infrastructure Goals.			
Accomplishments/Planned Programs Subtotals		1.608	0.826
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA				Project (Number/Name) 772 / Navy Joint National Training Capability (JNTC)			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
772: Navy Joint National Training Capability (JNTC)	3.260	3.041	3.042	2.578	-	2.578	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

These funds enable the Navy to develop unique maritime capabilities that integrate joint live, virtual, and constructive elements into a seamless joint training environment. The Navy program activities include conducting research, development, and integration of a common, realistic, joint and coalition, operational to tactical level training architecture to deliver individual and collective constructive joint training for use in Fleet Synthetic Training (FST) events, Combatant Commander (CCDR) exercises, Ballistic Missile Defense Exercises (BMDEX) certification events, and BMD at Sea training events in support of CCDR's training, deployment certification and operational requirements.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: Navy Joint National Training Capability (JNTC)	3.041	3.042	2.578
Description: Develops unique maritime capabilities that integrate joint live, virtual, and constructive (JLVC) elements into a seamless joint training environment. Using a scientific and phased approach that focuses on modeling ground, air, space, and maritime capabilities, this program researches new technologies and methods that provide a crucial technology-based foundation that supports all JNTC training transformation, JLVC federation, and Combatant Commanders exercise and engagement operations. This program provides a current and emerging multi-functional and multi-domain near-peer threat environment and associated warfighting challenges to stimulate Joint and Navy training audiences, enabling the Fleet Commander to certify deploying forces in a synthetic Joint training environment and Joint Force Maritime Component Commands (JFMCCs) to participate in realistic Combatant Commander Exercises. FY 2021 Plans: 1. Provide development of new capability for integration with annual software release of the Navy Training Baseline (NTB) to enable tactics, techniques and procedures (TTP) development for contested environments and ballistic missile defense (BMD). 2. Develop advanced models to support Navy and Joint Operational Level of War (OLW) exercises and tactical training; to include Anti-ship Cruise Missile (ASCM) defense, Counter-ISR, including unmanned system (UxS) defense, theater and regional BMD, and AEGIS Weapons System, maritime air, tactical air and unmanned sensor and weapon system capability upgrades. FY 2022 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021		
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA	Project (Number/Name) 772 / Navy Joint National Training Capability (JNTC)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
1. Provide development of new capability for integration with annual software release of the Navy Training Baseline (NTB) to enable tactics, techniques and procedures (TTP) development for contested environments and Ballistic Missile Defense (BMD).				
2. Develop advanced models to support Navy and Joint Operational Level of War (OLW) exercises and tactical training; to include Anti-ship Cruise Missile (ASCM) defense, Counter-ISR, including unmanned system (UxS) defense, theater and regional BMD, and AEGIS Weapons System, maritime air, tactical air and unmanned sensor and weapon system capability upgrades.				
FY 2021 to FY 2022 Increase/Decrease Statement: Decreases in FY 22 to support the Secretary of Defense's Joint Training Infrastructure Goals in other CE2T2 programs.				
Accomplishments/Planned Programs Subtotals		3.041	3.042	2.578
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA				Project (Number/Name) 773 / Joint Interoperability and Data Link Training Center (JID-TC)			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
773: Joint Interoperability and Data Link Training Center (JID- TC)	1.845	1.419	1.095	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
JID is the sole Department of Defense provider of joint interoperability training and Joint Interface Control Officer (JICO) production. JID trains CCMD, Services and partner nations' operations center personnel in mission areas such as joint fires, net enabled weapons, remotely piloted aircraft, integrated air and missile defense, and contested operations including secure internet with Link-16/TDL equipped major weapon systems and smart bombs. FY19 was the first year the JID received RDT&E funding in order to support the development of the JICO Simulator. The JICO Simulator will allow the JID to train students across the Services on the proper planning, management and execution of tactical data links (TDL) to fill the gaps for non-participating weapon systems missing in live exercises.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2020	FY 2021	FY 2022	
Title: Joint Interoperability and Data Link Training Center (JID-TC)									1.419	1.095	0.000	
Description: JICO Simulator will allow the JID to train students across the Services on the proper planning, management and execution of tactical data links (TDL). The simulator will allow the JID to build robust practice scenarios that students can execute fixing TDL architecture plans as necessary. This capability will not only create realistic training scenarios with the ability to inject multi-tactical data link network anomalies for training, but can also be used to support Combatant Command (CCMD) operations centers during planned exercises.												
FY 2021 Plans: JID-TC will close out projects.												
FY 2022 Plans: N/A.												
FY 2021 to FY 2022 Increase/Decrease Statement: This will no longer be a Joint Staff function in FY 2022.												
Accomplishments/Planned Programs Subtotals									1.419	1.095	0.000	
C. Other Program Funding Summary (\$ in Millions)												
N/A												

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA	Project (Number/Name) 773 / Joint Interoperability and Data Link Training Center (JID-TC)
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy		
N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA				Project (Number/Name) 774 / USMC Joint National Training Capability (JNTC)			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
774: USMC Joint National Training Capability (JNTC)	0.921	0.901	0.636	0.538	-	0.538	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

These funds advance USMC training capabilities by providing stability and risk reduction to a variety of efforts focused on improving the fidelity and realism of training simulation systems. These systems are tailored to prepare operational Marine Air Ground Task Force (MAGTF) units for worldwide deployment in support of CCMD operations and engagements and are available to any organization or entity training via the JLVC federation of training tools. Based on the Commandant's planning guidance, the Marine Corps will continue to improve performance of the MAGTF Tactical Warfare Simulation in the areas of the JLVC-multi-resolution federation bridge, common database terrain data ingestion, and JLVC interoperability. The MAGTF Tactical Warfare Simulation also provides a single source training environment capability that enables users to select single or multiple play boxes (terrain data sets) for training simulation systems easing the burden of requesting terrain, 3D models, and other geographic layers into a single source. In addition to developing an exercise planning, design, implementation, execution, and control tool, the MAGTF Tactical Warfare Simulation also enhances pattern of life (PoL) / indigenous population modular service enabling exercise designers the ability to rapidly build new scenarios and incorporate human geography elements into the training scenarios.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: Marine Corps Joint National Training Capability (JNTC)	0.901	0.636	0.538
Description: Provides pattern of life (POL) / indigenous population (IP) concept development and integration, supporting both constructive and virtual training simulation systems by injecting "people packs" with realistic attributes and behaviors associated with specified regions. Full integration of terrain generation 3D models and objects into joint federation synthetic training environment eliminates the burden of requesting terrain data by the Services and CCMDs creates a single, shareable, repository across the federation. Addresses crucial integration of MAGTF Tactical Warfare Simulator (MTWS) into the Korean side of multi-resolution federation bridge supporting Ulchi Focus Guardian covering training shortfalls in engineering obstacle simulations (minefields, chemical, anti-tank ditches, bridges, etc.). Initiates design and development of a joint exercise design and control tool enhancing connectivity across multiple platforms providing exercise planning, design and control within various joint simulation constructs.			
FY 2021 Plans: Continue development of pattern-of-life (POL) models that can insert synthetic opposing forces and civilian population into scenarios that will autonomously respond with native behaviors of that region providing synthetic adversaries that adapt to various training scenarios in multi-domain joint training.			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff			Date: May 2021		
Appropriation/Budget Activity 0400 / 6		R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA		Project (Number/Name) 774 / USMC Joint National Training Capability (JNTC)	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2020	FY 2021	FY 2022
Provide a capability for all simulation systems to use the same standardized terrain datasets across training domains. Sustain pre-deployment training for operations while supporting the readiness of deployed forces, particularly those primarily focused on global response force readiness.					
Address crucial integration of MTWS into Korean side of multi-resolution federation bridge supporting USFK joint exercises covering shortfalls identified in addressing engineering obstacle simulations (minefields, chemical, anti-tank ditches, bridges, etc.).					
Continue design and development of a joint exercise design and control tool enhancing interoperability and connectivity across multiple platforms. Deliver sharper training environment definitions, assist with defining friendly, enemy, neutrals (including joint multinational and synthetic forces), and support to concurrent planning tools.					
Explore innovative ways to train for operations in strategically challenging trans-regional, multi-domain and multi-functional (TMM) environments. Use web-based cloud technologies to accelerate exercise development and execution.					
FY 2022 Plans:					
Continue development of pattern-of-life (POL) models that can insert synthetic opposing forces and civilian population into scenarios that will autonomously respond with native behaviors of that region providing synthetic adversaries that adapt to various training scenarios in multi-domain joint training.					
Provide a capability for all simulation systems to use the same standardized terrain datasets across training domains. Sustain pre-deployment training for operations while supporting the readiness of deployed forces, particularly those primarily focused on global response force readiness.					
Address crucial integration of MTWS into Korean side of multi-resolution federation bridge supporting USFK joint exercises covering shortfalls identified in addressing engineering obstacle simulations (minefields, chemical, anti-tank ditches, bridges, etc.).					
Continue design and development of a joint exercise design and control tool enhancing interoperability and connectivity across multiple platforms. Deliver sharper training environment definitions, assist with defining friendly, enemy, neutrals (including joint multinational and synthetic forces), and support to concurrent planning tools.					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA	Project (Number/Name) 774 / USMC Joint National Training Capability (JNTC)	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021
Explore innovative ways to train for operations in strategically challenging trans-regional, multi-domain and multi-functional (TMM) environments. Use web-based cloud technologies to accelerate exercise development and execution.			
FY 2021 to FY 2022 Increase/Decrease Statement: Decrease in FY 22 to support the Secretary of Defense's Joint Training Infrastructure Goals in other CE2T2 programs.			
Accomplishments/Planned Programs Subtotals		0.901	0.636
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff										Date: May 2021		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA				Project (Number/Name) 775 / Advanced Distributed Learning (ADL)			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
775: Advanced Distributed Learning (ADL)	3.000	3.000	0.000	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification The ADL Initiative supports innovation and provides policy oversight to help the Services, Joint Staff, and partner agencies deliver their training and education more efficiently and cost effectively—anytime, anywhere. ADL provides policy oversight and coordination across DoD, Coalition partners, and other Federal agencies for distributed learning. This work supports interoperability (i.e., ensuring interagency technical and organizational systems function together). Ultimately, this promotes personnel readiness, ensuring the right people receive the right training and education, at the right time, and at the right cost. This Program transferred in FY21.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2020	FY 2021	FY 2022	
Title: Advanced Distributed Learning (ADL) Description: The ADL Initiative supports innovation and provides policy oversight to help the Services, Joint Staff, and partner agencies deliver their training and education more efficiently and cost effectively—anytime, anywhere. ADL provides policy oversight and coordination across DoD, Coalition partners, and other Federal agencies for distributed learning. This work supports interoperability (i.e., ensuring interagency technical and organizational systems function together). Ultimately, this promotes personnel readiness, ensuring the right people receive the right training and education, at the right time, and at the right cost. FY 2021 Plans: The Advanced Distributed Learning project is transferred to OSD (Personnel and Readiness) under a mutually agreed memorandum of understanding. Under the agreement, OSD(P&R) assumes responsibility for all Advanced Distributed Learning activities. FY 2021 to FY 2022 Increase/Decrease Statement: Program transferred to OSD in FY21.									3.000	0.000	-	
Accomplishments/Planned Programs Subtotals									3.000	0.000	-	
C. Other Program Funding Summary (\$ in Millions) N/A Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2022 The Joint Staff		Date: May 2021
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804768J / COCOM Exercise Engagem ent and Training Transformation (CE2T2) - Non MHA	Project (Number/Name) 775 / Advanced Distributed Learning (ADL)
D. Acquisition Strategy N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 The Joint Staff **Date:** May 2021

Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development					PE 0208043J / Planning and Decision Aid System (PDAS)							
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	23.871	4.537	3.039	0.000	-	0.000	-	-	-	-	-	-
P001: Planning and Decision Aid System OPS	23.871	4.537	3.039	0.000	-	0.000	-	-	-	-	-	-

Note

Joint Staff divests PDAS to Navy in FY22.

A. Mission Description and Budget Item Justification

Provides engineering and testing support to the Planning and Decision Aid System, a classified Joint Staff command and control system supporting the Combatant Commanders, Services, and Department of Defense agencies.

Classified details provided in a separate CLASSIFIED budget exhibit.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	4.537	3.039	3.101	-	3.101
Current President's Budget	4.537	3.039	0.000	-	0.000
Total Adjustments	0.000	0.000	-3.101	-	-3.101
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Internal DoD Transfer	-	-	-3.101	-	-3.101

Change Summary Explanation

PDAS transfers from the Joint Staff to Navy in FY22.

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