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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 The Joint Staff **Date:** May 2017

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 0804767J I <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>
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COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	44.500	-	44.500	42.940	40.071	40.063	41.044	Continuing	Continuing
<i>758: Joint National Training Capability (JNTC)</i>	-	0.000	0.000	32.550	-	32.550	31.370	29.052	29.044	30.025	Continuing	Continuing
<i>761: Joint Simulations Systems (JSS)</i>	-	0.000	0.000	1.103	-	1.103	1.067	1.000	1.000	1.000	Continuing	Continuing
<i>769: Joint Knowledge Development & Distribution Capability (JKDDC)</i>	-	0.000	0.000	4.168	-	4.168	4.126	4.108	4.108	4.108	Continuing	Continuing
<i>701: Air Force Joint National Training Capability (JNTC)</i>	-	0.000	0.000	2.964	-	2.964	2.917	2.869	2.869	2.869	Continuing	Continuing
<i>772: Navy Joint National Training Capability (JNTC)</i>	-	0.000	0.000	3.715	-	3.715	3.460	3.042	3.042	3.042	Continuing	Continuing

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 and enhance joint warfighting readiness by building training capabilities that support the operational readiness of the force. The elements associated with this coordinated effort consist of:

- Joint National Training Capability (JNTC)
- Joint Simulation System (JSS)
- Joint Knowledge Development & Distribution Capability (JKDDC)
- USSTRATCOM SPACE CYBER
- Air Force Joint National Training Capability (JNTC)
- Navy Joint National Training Capability (JNTC)

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 experiences using a managed set of globally distributed capabilities and activities. The program resources Service and

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<p>SOF joint training and enabling capabilities that improve interoperability and realism of tactical and operational joint training between the Services and USSOCOM. JNTC enables joint collective training for Combatant Commands and Services by developing relevant joint training content and ensuring global distributed access. The enabling capabilities support the Services and USSOCOM in their requirement to provide trained and ready forces in support of Combatant Command operational requirements. This program will focus efforts on improving, rather than consuming readiness and create a ready surge force consistent with Chairman's guidance.</p> <p>JSS: The Joint Simulation System (JSS), consisting of the Joint Theater Level Simulation (JTLS) and the Joint Conflict and Tactical Simulation (JCATS), provides a low cost, distributed or deployable, web-based joint training capability with a small technical and operator footprint. JSS funding provides warfighters with joint simulations and tools that enhance and enable Joint training across Services, Combatant Commands, Combat Support Agencies, NATO, and multinational partners. The Joint simulations and tools provided by JSS funding are critical enablers that support the delivery of trained, capable, and interoperable joint forces. JSS's intent is to maintain a capability to share simulation environments with coalition partners by continuing limited investments to ensure JTLS and JCATS remain relevant and provide reliable, low-cost, small footprint, distributed, and deployable joint training solutions.</p> <p>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 T2 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 (externally funded); and, administration of the Senior Enlisted Joint Professional Military Education (SEJPME) program. JKO expends research, development test and evaluation (RDTE) funding for leading edge technology review, market research, and integration to directly enhance specific aspects of the training capability as required to support Combatant Commanders, CE2T2 Program Goals and Objectives, and the Chairman Joint Chiefs of Staff (CJCS) training guidance. JKO satisfies all requirements necessary to provide the CE2T2 stakeholders with a distributed learning capability and access to web-based training content, learning resources, and distributed online training tools.</p> <p>USSTRATCOM CYBER: The USSTRATCOM CYBER funding provided architecture and analysis support to Space Security and Defense Program (SSDP) and the JOINT SPACE OPERATIONS CENTER (JICSpOC) through Modeling, Simulation and Analysis (MS&A); Trade-Off Analysis; Concept Development; Scenario Development; and Military Utility Analysis.</p> <p>Air Force JNTC: The 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. The Air Force supports development of cross-domain solutions that enable the integration of systems with disparate security requirements, and significantly increases the training audience to additional joint and coalition participants. Additionally, the Air force supports the integration of tactical models into the virtual environment.</p> <p>Navy JNTC: These funds enable the Navy to develop unique maritime capabilities that integrate JLVC elements into a seamless joint training environment. The Navy program activities include conducting research, development, test and evaluation, and cross-service architecture certification on joint-capable systems. Additionally, the program develops cross-domain architectures for U.S. and Coalition Forces and ensures sister service modeling/simulation and instrumentation efforts follow a unified standard.</p>		

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B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	0.000	0.000	44.500	-	44.500
Current President's Budget	0.000	0.000	44.500	-	44.500
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

COCOM Exercise Engagement and Training Transformation (CE2T2) transfers to The Joint Staff in FY 2018 in PE 0804767J from 0804767D8Z. All Prior Year, FY 2016 and FY 2017 data will be reported by OSD P&R.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: FY 2018 The Joint Staff										Date: May 2017		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA				Project (Number/Name) 758 / Joint National Training Capability (JNTC)			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
758: Joint National Training Capability (JNTC)	-	0.000	0.000	32.550	-	32.550	31.370	29.052	29.044	30.025	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

COCOM Exercise Engagement and Training Transformation (CE2T2) transfers to The Joint Staff in FY 2018 in PE 0804767J from 0804767D8Z.

A. Mission Description and Budget Item Justification

Investment in the Joint National Training Capability (JNTC) program will enable Service and Combatant Commands to train as they operate. The net funding increase from FY 2016 through FY 2018 represents planned growth and internal reprogramming decisions to accelerate development of a cloud-enabled joint training environment. The funding requested continues to modernize joint training capabilities into a single integrating architecture for Joint Training that is aligned to the DoD Chief Information Officer IT mandates. Funding supports the development of cloud-enabled modular training application services. Program intent is to reduce dependence on touch labor, and mitigate the impact of reductions in operation and sustainment funding. Focus must be maintained to deliver operationally relevant training environments and respond to changes in global security landscape and the warfighter's operational environment. JNTC enables the Department of Defense to be responsive to the warfighters' pace of changing operational concepts, threat environments, and best practices. In FY 2018, this investment continues expanding capabilities and access for Service and Combatant Command trainers to plan and execute joint training. Funds support improved relevance and realism of training by providing capabilities that replicate the contemporary and future operating environment.

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

	FY 2016	FY 2017	FY 2018
Title: Joint National Training Capability (JNTC)	-	-	32.550
Description: JNTC provides the technical standards, architecture (blueprint), and development processes required to integrate/link joint training programs. The Joint Training Environment is envisioned as an integrated network of training sites and nodes, and accessible joint training and force development services. By leveraging existing training programs and initiating specific actions, JNTC develops credible opposing force capabilities and expanded access to assets typically unavailable to the training audience. This enhances the integration of joint training objectives into Service training events. Funding in this account supports the technical integration of Joint and Service modeling and simulation training capabilities. The resulting capabilities enable selective aggregation of training audiences at the Combatant Command, Joint Task Force, and Component Command Headquarter levels. The funding supports modernization of the Joint Training Environment (JTE) to increase warfighter access to semi-automated training enablers within the Joint Training Synthetic Environment (JTSE) through web-based, modular cloud capabilities.			

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	Project (Number/Name) 758 / <i>Joint National Training Capability (JNTC)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2016	FY 2017	FY 2018
<p>The Adaptive Training Capability Program (ATCP) is a subordinate component of JNTC that enables the Joint Force to be responsive to the warfighters' pace of changing operational concepts, threat environments, and best practices. ATCP funding advances joint capabilities and interoperability by addressing emerging joint training requirements through a managed set of globally distributed JLVC enablers. ATCP funding promotes joint context to Service training programs and joint enablers supporting Combatant Command training requirements and CJCS High Interest Training Issues identified in the Chairman's Annual Training Guidance.</p> <p><i>FY 2018 Plans:</i></p> <ul style="list-style-type: none"> • Integrate the role player access capability into the Joint Training Tool environment. • Continue to mature Joint Training Tool modular services to reach a Tier 1 and 2 joint training initial operating capability in FY 2019. This includes smart graphics that allow planners to describe an operation with graphics which auto-initiates the Joint Training Tool service modules to replicate the movement of forces, adjudicate interaction with opposing forces, and return results of the operation that can drive a training scenario and stimulate the appropriate decision points. • Continue Joint Training Tool scenario development to support a broader range of joint training options. • Continue to mature Joint Training Tool cloud capabilities and explore cloud hosting options for the long-term. 			
Accomplishments/Planned Programs Subtotals	-	-	32.550

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

RDT&E development efforts are evaluated based on the performance metrics below. This ensures the Joint Force Trainer capabilities development effort synchronizes with warfighter requirements. Performance metrics include, but are not limited to: access, cost, realism, relevance, and technology and are defined below.

- Access – Develop design standards that enable participation across DoD and, as applicable, with Coalition Partners. Make the environment available to meet user demands.
- Cost – Enable the Joint Force Trainer to prepare and execute training at a more effective and efficient cost than current capabilities allow.
- Realism – Enable the Joint Force Trainer to create a training environment that is closer to the real world environment than current capabilities allow.

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	Project (Number/Name) 758 / <i>Joint National Training Capability (JNTC)</i>

- Relevance – Maintain operational relevance through adaptation to the changing operational environment.
- Technology – Sustain the training environment network through developments for distributed home station training that include modular cloud-enabled training services.

Measures:

- Cost - Vendors provide ordered hours and projected costs remain within 10 percent of government estimates.
- Schedule - Task completions (software enhancements, bug fixes, and cyber security requirements) delivered within 6 months of government estimate.
- Performance - Product results, outcomes or milestones meet specified requirements and successfully pass more than 80 percent of operational assessment test cases.
- DoD Demand - Number of Commands, Services, and Agencies using Joint Staff developed training products.
- Partner Nation Demand - Number of partner nations using Joint Staff developed training products.

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA					Project (Number/Name) 761 / Joint Simulations Systems (JSS)		
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
761: Joint Simulations Systems (JSS)	-	0.000	0.000	1.103	-	1.103	1.067	1.000	1.000	1.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

COCOM Exercise Engagement and Training Transformation (CE2T2) transfers to The Joint Staff in FY2018 in PE 0804767J from 0804767D8Z.

A. Mission Description and Budget Item Justification

The Joint Simulation System (JSS) will decompose, harvest, and reuse DoD investment in joint simulations to develop cloud-enabled modular services (CEMS), reaching Initial Operating Capability in FY 2016. JSS will further development of existing Joint Conflict and Tactical Simulation (JCATS) and Joint Theater Level Simulation (JTLS) as required, to remain relevant and responsive to meet Combatant Command training requirements as the Joint Training Environment is implemented. JSS will provide design and development of web-based applications used as services in CEMS environment.

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

	FY 2016	FY 2017	FY 2018
Title: Joint Simulation System (JSS)	-	-	1.103
Description: This effort provides warfighters with joint simulations and tools that enhance and enable Joint training across Services, Combatant Commands, agencies and coalition partners. These joint simulations and tools are part of an overall Joint Live Virtual Constructive baseline of training capabilities. They represent a set of training enablers, and “certified systems” that are interoperable and acceptable for usage within the joint training environment. The joint simulations and tools provided by JSS are critical enablers that support the delivery of trained, capable, and interoperable Joint Forces.			
FY 2018 Plans:			
<ul style="list-style-type: none"> • Modernize Joint Theater Level Simulation graphical user interface to take advantage of established open source and commercial enhancements. • Modernize Joint Theater Level Simulation after action review capability for more efficient and faster queries and data retrieval. • Develop the Joint Theater Level Simulation Combat Systems Prototype into a web-based modular capability in support of the Joint Training Synthetic Environment. • Virtualize and eliminate the Joint Theater Level Simulation and Joint Conflict and Tactical Simulation client server architecture in pursuit of a fully web-based service. 			
Accomplishments/Planned Programs Subtotals	-	-	1.103

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	Project (Number/Name) 761 / <i>Joint Simulations Systems (JSS)</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		
E. Performance Metrics RDT&E development efforts are evaluated based on performance metrics. This ensures the development of Joint Force Trainer (subject matter experts) capabilities synchronizes with warfighter requirements. Performance metrics include, but are not limited to: time, cost, realism, and fidelity and are defined below.		
<ul style="list-style-type: none"> • Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow? • Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training at a more effective and efficient cost than current capabilities allow? • Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow? • Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow? 		
Measures:		
<ul style="list-style-type: none"> • Cost - Vendors provide ordered hours and projected costs remain within 10 percent of government estimates. • Schedule - Task completions (software enhancements, bug fixes, and cyber security requirements) delivered within 6 months of government estimate. • Performance - Product results, outcomes or milestones meet specified requirements and successfully pass more than 80 percent of operational assessment test cases. JTLS and JCATS availability of use in support of all training activities remains above 95 percent. • DoD Demand - Number of exercises/events supported by JTLS and JCATS. • Partner Nation Demand - Number of partner nations using Joint Staff developed training products (active foreign military sales cases). 		

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA					Project (Number/Name) 769 / Joint Knowledge Development & Distribution Capability (JKDDC)		
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
769: Joint Knowledge Development & Distribution Capability (JKDDC)	-	0.000	0.000	4.168	-	4.168	4.126	4.108	4.108	4.108	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

COCOM Exercise Engagement and Training Transformation (CE2T2) transfers to The Joint Staff in FY2018 in PE 0804767J from 0804767D8Z.

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 (P&R) CE2T2 Program Goals & Objectives guidance, CJCS High Interest Training Issues, Joint Staff training priorities, and JKO Stakeholders (Combatant Commands, Services, and Combat Support Agencies, Interagency, and Multinational) prioritized training requirements. JKO supports a career-long joint learning continuum, joint professional military education, and tailored common training standards to Service members for tasks that are jointly executed, resulting in trained, capable, and interoperable joint forces. JKO research and development will improve all components of the Joint Content Management Architecture including:

- JKO Learning Content Management System (LCMS): 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. JKO LCMS is necessary to develop, host and deliver JKO courses and track/report students' progress, completions and survey results more effectively and efficiently. JKO LCMS extends web-based, distributed access to mission-critical joint training requirements. There are currently over 2.7 million registered users of the JKO LCMS.
- 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. Specifically, C/JTF 'battle staffs' will be adequately trained, as individuals and the staffs collectively, based on SGST development and implementation throughout the joint training enterprise. JKO integration of SGST simulation exercise scenarios and prerequisite JKO courses enable blended learning training support to large-scale, collective training exercises that augment the Joint Event Learning Cycle and in meeting combatant commanders exercise objectives.
- JKO mobile application training device development: Development and enhancements facilitate the global distribution of web-based joint training content on portable, hand-held platforms (cell phones and tablets). JKO Mobile App extends access to training courses and learning resources to personal use of mobile phones and tablets.

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

	FY 2016	FY 2017	FY 2018
Title: Joint Knowledge Development & Distribution Capability (JKDDC)	-	-	4.168

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	Project (Number/Name) 769 / <i>Joint Knowledge Development & Distribution Capability (JKDDC)</i>

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

Description: Joint Knowledge Online (JKO) advance technology initiatives primarily include the JKO Learning Content Management System (LCMS) application, Small Group Scenario Trainer (SGST) desktop modeling and simulation based training capability, 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 Combined/Joint Task Force (C/JTF) billets. JKO LCMS 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" will be better trained, as individuals and the staffs collectively, based on SGST development and implementation throughout the joint training enterprise. JKO mobile courseware training device development facilitates the global distribution of web-based joint training content on portable, hand-held platforms for DoD personnel.

FY 2018 Plans:

Develop, test and deliver 2 JKO Learning Content Management System (LCMS) releases resulting in improved cybersecurity, and a more effective and efficient online training management application that is interoperable with DoD personnel management systems. Requirements will be derived from CCMD user feedback and DoD training priorities directed by DASD(R) and the Chairman's Training Guidance to provide a DoD enterprise-wide online training toolkit, and develop content for pre-exercise training and support - as required by the Services - and support individual and unit training for Special Purpose - Marine Air Ground Task Force (SP-MAGTF) missions. JKO anticipates these enhancements will improve access and the ease of use for the projected ~50,000 daily log-ins and ~550,000 monthly course completions by DoD personnel. Improvements to the JKO LCMS will directly benefit thousands of individuals by providing them global 24/7 access to mandatory joint training as they prepare to participate in CCMD exercises and real world missions. JKO will also focus on enhancements to improve the management of individuals' training records and readiness reporting as the JKO LCMS extends information sharing and web services with DoD personnel management systems. JKO will continue to enhance functionality based on user experience and feedback.

- Develop, test, and deliver 4 JKO Small Group Scenario Trainer (SGST) desktop modeling and simulation application releases resulting in a more effective and efficient training capability integrated within the JKO Learning Content Management System (LCMS). JKO anticipates these enhancements will improve the quality of the training experience for CCMD exercise participants resulting in their heightened preparedness for real world operations. The SGST will be used as part of the OSD endorsed Blended Learning Training component in approximately 8 CCMD collective training exercises to prepare individuals serving on CCMD required small functional teams and C/JTF "battle staffs." Individual training proficiency improvement will be measured and quantified as part of the exercise design. JKO will continue to enhance SGST functionality based on user experience and feedback.

FY 2016	FY 2017	FY 2018

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2016	FY 2017	FY 2018
<ul style="list-style-type: none"> JKO will assess, refine, and continue executing its comprehensive plan to enhance the JKO mobile application and mobile training products. JKO's planned components include courseware and video conversions to portable hand-held devices while leveraging other DoD agencies, interagency, and multinational training courseware ported to the JKO mobile application. JKO anticipates the development and conversion of ~200 training courses, eBooks, Podcasts, job aids, and videos resulting in reduced cost for classroom training and thousands of hours delivered onsite and on demand to DoD personnel mobile platforms worldwide. JKO will continue to enhance its mobile capability based on user experience and feedback. 			
Accomplishments/Planned Programs Subtotals	-	-	4.168

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Joint Staff prescribed performance metrics include, but are not limited to: time, cost, realism, and fidelity and are defined below.

- Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow?
- Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training at a more effective and efficient cost than current capabilities allow?
- Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow?
- Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow?

Measures:

- Identify, develop, test and implement 15 or more cyber-security, operational, and functional JKO LCMS requirements.
- Identify, develop, test and implement 12 or more cyber-security, operational, and functional JKO SGST requirements.
- Identify, develop, test and implement 6 or more cyber-security, operational, and functional JKO mobile App requirements.

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	Project (Number/Name) 701 / <i>Air Force Joint National Training Capability (JNTC)</i>
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COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
701: <i>Air Force Joint National Training Capability (JNTC)</i>	-	0.000	0.000	2.964	-	2.964	2.917	2.869	2.869	2.869	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

COCOM Exercise Engagement and Training Transformation (CE2T2) transfers to The Joint Staff in FY2018 in PE 0804767J from 0804767D8Z.

A. Mission Description and Budget Item Justification

The Air Force JNTC funding provides a focused upgrade to develop models for space-based capabilities for integration into the Joint Live, Virtual, and Constructive (JLVC) environment. The Air Force supports development of cross-domain solutions that enable the integration of systems with disparate security requirements, and significantly increases the training audience to additional joint and coalition participants.

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

	FY 2016	FY 2017	FY 2018
Title: Air Force Joint National Training Capability (JNTC)	-	-	2.964
Description: The Air Force continues to develop joint enablers that drive realistic/effective training by producing a deployable Electronic Warfare training capability for Europe which replicates highly advanced Surface-to-Air Missiles and advanced Anti-Aircraft Artillery threats for U.S. and coalition forces. Additionally, the Air Force assists in the engineering, development, and deployment of Joint Cross Domain Information Sharing (JCDIS) Enterprise Network Architecture which will enable joint and coalition participants to train while protecting classified information. Furthermore, the Air Force is creating cyber-contested environments in the distributed mission operations setting to challenge the joint exercise/training audience. Finally, comprehensive space effects are being integrated into the JLVC federation of models.			
FY 2018 Plans:			
• Live, Virtual, Constructive - Operational Training (LVC-OT) training solution supporting collaborative planning, cost, after-action, and ROI metrics.			
• Cyber simulator environment generator/Blue cyber effects simulation.			
• Space Simulation improvements to model both space effects and OPFOR capabilities affecting the space environment.			
Accomplishments/Planned Programs Subtotals	-	-	2.964

C. Other Program Funding Summary (\$ in Millions)

N/A

UNCLASSIFIED

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C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy N/A		
E. Performance Metrics RDT&E development efforts are evaluated based on performance metrics. This ensures the development of Joint Force Trainer (subject matter expert) capabilities synchronize with warfighter requirements. Performance metrics include, but are not limited to: time, cost, realism, and fidelity and are defined below.		
<ul style="list-style-type: none"> • Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow? • Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training at a more effective and efficient cost than current capabilities allow? • Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow? • Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow? 		
Measures:		
<ul style="list-style-type: none"> • Cyber: Establish a persistent simulation environment that can be configured rapidly and accurately to reflect the desired operating environment of the training audience. Also, create an ability to reflect cyber activities against a live Integrated Air Defense system. • Space: a fully operational GPS environment which allows space operators to actively participate in Distributed Mission Operations-Space LVC missile warning, GPS disruption and Infrared special events. Also develop space models to model Space as a contested environment to accurately portray impacts of adversary actions in the Space domain. • OPFOR: a prototype for a next generation tactical surface to air threat simulator emulating modern fielded threats fielded with potential adversary maneuver elements. • A plan for integrating Army ground instrumentation within the Air Force run Polygon range complex. 		

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Exhibit R-2A, RDT&E Project Justification: FY 2018 The Joint Staff										Date: May 2017		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA				Project (Number/Name) 772 / Navy Joint National Training Capability (JNTC)			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
772: Navy Joint National Training Capability (JNTC)	-	0.000	0.000	3.715	-	3.715	3.460	3.042	3.042	3.042	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

COCOM Exercise Engagement and Training Transformation (CE2T2) transfers to The Joint Staff in FY2018 in PE 0804767J from 0804767D8Z.

A. Mission Description and Budget Item Justification

These funds enable the Navy to develop unique maritime capabilities that integrate JLVC elements into a seamless joint training environment. The Navy program activities include conducting research, development, test and evaluation, and cross-service architecture certification on joint-capable systems. Additionally, the program develops cross-domain architectures for U.S. and Coalition Forces and ensures sister service modeling/simulation and instrumentation efforts follow a unified standard.

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

	FY 2016	FY 2017	FY 2018
Title: Navy Joint National Training Capability (JNTC)	-	-	3.715
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 (T2), JLVC Federation, and Combatant Commanders Exercise and Engagement (CE2) operations.			
FY 2018 Plans:			
<ul style="list-style-type: none"> • Continue alignment of Navy LVC training standards with JLVC training standards to include with research of integrated standards with USMC's Aviation Distributed Virtual Training Environment (ADVTE). • Prototype and develop of integrated capabilities between Navy tactical training ranges and synthetic training capabilities in support of Navy LVC efforts. • Accelerate research and development of combat identification training simulation as an enabler for spectrum operations in support of the information warfare commander (IWC). • Accelerate exploration of technologies to enable Integrated Air and Missile Defense (IAMD) and other combined warfare area and joint training with coalition partners in the Pacific Fleet (PACFLT) Area of Responsibility including Japan, Korea, and Australia. 			

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Exhibit R-2A, RDT&E Project Justification: FY 2018 The Joint Staff		Date: May 2017
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	Project (Number/Name) 772 / <i>Navy Joint National Training Capability (JNTC)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2016	FY 2017	FY 2018
• Continue collaborative development with Service and Agency partners to improve the realism and relevancy of tactical to operational level of war training capabilities.			
Accomplishments/Planned Programs Subtotals	-	-	3.715

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

RDT&E development efforts are evaluated based on performance metrics. This ensures the Joint Force Trainer (subject matter expert) capabilities development effort synchronizes with warfighter requirements. Performance metrics include, but are not limited to: time, money, realism, and fidelity and are defined below.

- Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow?
- Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training at a more effective and efficient cost than current capabilities allow?
- Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow?
- Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow?
- The Navy will produce one Navy Training Baseline (NTB) software release to include documentation; will design and implement upgrades to Joint Semi-Automated Forces (JSAF) consistent with approved requirements and contractual requirements and document the effects of JSAF capabilities (robustness) and stability. Will design, implement, test, and integrate NTB enhancements in accordance with requirements.
- For JSAF, Joint Simulation BUS (JBUS) reliability, scalability, and tactical control, the Navy will continuously update the Common Operational Picture (COP) during large scale JLVC exercises.