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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 The Joint Staff										Date: February 2015		
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 Program Element (Number/Name) PE 0604787J I Joint Systems Integration							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	3.230	3.834	7.002	-	-	-	-	-	-	-	-	14.066
P787: Joint Systems Integration	3.230	3.834	7.002	-	-	-	-	-	-	-	-	14.066
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In support of the Chairman's responsibility for the assessment of the capability and adequacy of United States forces to successfully execute the national military strategy the Joint Systems Integration (JSI) Program Element provides mission funding for the Joint Staff J6 C4 Assessments Division (C4AD). C4AD conducts interoperability assessments and develops solutions/recommendations to improve integration of Service, Defense Agency, and coalition systems.

C4AD's Persistent Command and Control Environment replicates an operational environment and provides Combatant Commands, Services, Agencies and Coalition partners at the joint force headquarters level, a laboratory and assessment venue for the warfighter and capability developer to identify and solve interoperability and integration issues with current and near-term joint and coalition capabilities. With this capability, C4AD assesses system of systems interoperability, operational capability, procedural compliance and technical suitability of emerging and existing systems and programs to confirm readiness for deployment.

By establishing ground truth for interoperability and suggesting remedies for demonstrated shortfalls, C4AD is an enabler for the Chairman's priorities to: pioneer new ways to combine and employ emergent capabilities, drive Jointness deeper, sooner in capability development, move quickly toward Joint information and simulation networks that support secure and agile command and control, expand the envelope of interagency and international cooperation, and promote multilateral security approaches and architectures. In FY 2016, this legacy USJFCOM PE will be consolidated along with PE 0604828J (JFIIT) and PE 0607828J (JII) into a single new Joint Staff PE 0604826J – Joint Command, Control, Communications, Computers, and Cyber Integration (JC5I).

In FY2016 this program element will be consolidated with PE 0604826J - Joint C5 (Joint Command, Control, Communications, Computers and Cyber) Capability Development, Integration, and Interoperability Assessments.

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B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	
Previous President's Budget	7.402	7.002	6.839	-	6.839	
Current President's Budget	3.834	7.002	-	-	-	
Total Adjustments	-3.568	-	-6.839	-	-6.839	
• Congressional General Reductions	-	-				
• Congressional Directed Reductions	-	-				
• Congressional Rescissions	-	-				
• Congressional Adds	-	-				
• Congressional Directed Transfers	-	-				
• Reprogrammings	-	-				
• SBIR/STTR Transfer	-	-				
• Carry-over from FY2014	-3.568	-	-	-	-	
• PE Consolidation	-	-	-6.839	-	-6.839	
Change Summary Explanation						
In FY2016 this program element will be consolidated with PE 0604826J - Joint C5 (Command, Control, Communications, Computers, and Cyber) Capability Development, Integration, and Interoperability Assessments.						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2014	FY 2015	FY 2016
Title: Joint Systems Integration				3.834	7.002	-
FY 2014 Accomplishments: Interoperability Assessments(IA) and Interoperability Technology Demonstration Center (ITDC)						
Continued the efforts initiated for FY 2013 and responded to identified operational issues and shortfalls. Interoperability assessments were conducted to solve warfighter problems, including coalition challenges. FY 2014 assessment objectives focused on; Cyberspace, Mission Partner Environment, Common Operational Picture, Wireless to the Tactical Edge, Joint Fires Capabilities, Data Strategy Implementation, and Information Sharing Capabilities.						
Afghanistan Mission Network (AMN) Coalition Interoperability Assurance Validation (CIAV) Transition and Assessments – AMN is the primary Coalition, Command, Control and Communications and Computers, Intelligence, Surveillance, and Reconnaissance						
(C5ISR) network for International Assistance Forces (ISAF) in Afghanistan. C4AD is supporting the assessment of Coalition Mission Threads (CMTs) and Coalition Tactics, Techniques and Procedures (CTTPs) to identify and correct interoperability problems.						

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Bold Quest 2014 (BQ14) Technical Support and Interoperability Assessments – Assessed interoperability and documented identified deficiencies of select systems within the joint fires mission thread during BQ14-1 and BQ 14-2 operational venues.				
Coalition Interoperability Assessments – Conducted interoperability assessments between selected systems during the Coalition Warrior Interoperability Exploration, Experimentation, Examination Exercise (CWIX) 2014 event.				
Global Command and Control-Joint (GCCS-J) v4.2.0.9 and Radiant Mercury (RM) Risk Mitigation Interoperability Assessment – Assessed interoperability of GCCS-J and RM.				
Mission Partner Environment (MPE) Federated Mission Networking (FMN) Interoperability Assessments – Provided interoperability assessments of selected U.S. and Coalition systems.				
Mission Partner Environment (MPE) Federated Mission Networking (FMN) Joining, Membership and Exit Instructions (JMEI) Assessments – Assessed FMN's JMEI developed for Combined Endeavor 2014.				
Tactical Infrastructure Enterprise Services (TIES) Coalition Warfare Program (CWP) Interoperability Assessment – Assessing the capability of sharing data from authoritative data sources using web services in a C2 Core conformant, standardized data format.				
Tactical Infrastructure Enterprise Services (TIES) Joint Capability Technical Demonstration (JCTD) Interoperability Assessment - Assessing the capability of sharing data from authoritative data sources using web services in a C2 Core conformant, standardized data format.				
Joint Fire Support (JFS) Joint Mission Thread (JMT) Interoperability Assessment – Assessed JFS system of systems interoperability across user, decision maker, and Service boundaries.				
Ground to Air Situational Awareness (C2A SA) Operational Assessment Support – Assessed interoperability between U.S./ Coalition servers and participating aircraft.				
Network Integration Evaluation (NIE) Mission Partner Environment (MPE) Analysis Support – Observed current joint and coalition information sharing shortfalls and recommended options for implementing an MPE in future MPE events.				
Joint Command and Control (JC2) Common User Interface (CUI) / Enterprise Storefront (ES) Capability Assessment – Assessing JC2 CUI/ES capability in an operational context to support decision-making, planning, and situational awareness.				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Mission Partner Environment Shared Situational Awareness Study Support (MPE SSA) to NORAD-USNORTHCOM – Assessed how a MPE would function in a Defense Support of Civil Authorities (DSCA) environment.				
Automated NATO Database Interface (ANDI) Interoperability Assessment – Assessing the automated exchange of targeting data between the U.S. Modernized Integrated Database (MIDB) and the NATO Integrated Command and Control Database (ICCDB).				
Results: 19 assessment projects completed to resolve coalition and warfighter challenges. Assessments produced 307 findings, 69 conclusions, and 55 recommendations (32 confirmed accepted/implemented to date)				
Technical Assessments and Integration (TA&I) Continued FY 2013 initiatives investigating impacts of technology advances in wireless devices, mesh and ad-hoc networking, satellite modem technology, and small lightweight secure digital capabilities on warfighter command and control capabilities and match emerging critical warfighter requirements with the technologies to identify near-term technology solutions supporting Combatant Commanders. Areas of concentration included Wireless to the Tactical Edge Integration, Cyberspace, and Common Operational Picture.				
Joint Operational Long Term Evolution Deployable (JOLTED) Tactical Cellular System (TACTICS) Joint Capability Technical Demonstration (JCTD) - Technical Manager – JOLTED TACTICS is an Internet Protocol (IP) based system designed to provide robust communications to tactical users. This system leverages innovations in Fourth Generation (4G) LTE Cellular technologies and mobile Ka band spread spectrum satellite communications to deliver megabits of data to mobile and dismounted teams armed with mobile devices such as smartphones or netbooks.				
C2 Applications over Broadband Cellular (C2 ABC) Integration and Assessment – Integrating and assessing emerging C2 and tailored applications using broadband cellular technologies to provide the warfighter at the tactical edge with expanded situational awareness.				
Celestial Reach Joint Capability Technical Demonstration (JCTD) Assessment – Assessed a wide-band antenna solution for joint air, ground, and maritime operations and the capability's utility in providing wide-band communications that support Command and Control (C2) and Intelligence Surveillance and Reconnaissance (ISR) applications to enroute users.				
National Security Agency (NSA) Commercial Solutions for Classified (CSfC) Secure Wireless Local Area Network (SWLAN) Integration Assessment – Assisting the National Security Agency in the development and assessment of a Suite B software encryption solution. This capability supports communicating over SECRET wireless networks without using Type-1 hardware solutions (e.g., SecNet 54, Talon, or KG-250s).				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Tactical Mobility Security Integration and Assessment (TMSIA) Spiral II –In partnership with the National Security Agency integrating a security architecture for lightweight, man-portable communications-on-demand packages that allow the user to quickly establish secure 4G cellular wireless networks. Results: 6 integration projects completed or in work. 2 technical assessments of soon to be fielded capabilities revealed: 47 findings, 2 conclusions, and 9 recommendations. Technical integration efforts including JCTD support include 3 Defense Information Assurance Security Accreditation Working Group (DSAWG) presentations, 2 technical demonstrations, 2 technical integration tests, 13 developmental tests, 1 technical readiness test, and 1 certification test and evaluation. Persistent Command and Control Environment Continued FY 2013 initiatives by engaging the Services and Communities of Interest (COI) to leverage the capabilities of the Persistent Command and Control Environment by bringing joint solutions through C4AD's integration and operational assessment process. Provide a comprehensive Joint Task Force (JTF) environment required to also support cyber training, cyber capability development, and cyber assessment by expanding the connectivity and capability of the existing persistent environment to support the Enterprise Cyber Range Environment (ECRE) focused on user requirements, architectures, standards, measures, metrics, instrumentation, and data collection requirements. C4AD Project Engineering Support – Provided infrastructure, communications, network, information assurance, security, and engineering support as required. Cyber Assessment Event Number 1- Provided a representative Joint Task Force (JTF) Headquarters node within the Enterprise Cyber Range Environment (ECRE) to assess C2 system vulnerabilities to red team exploitation and improve blue team responses. Cyber Assessment Event Numbers 2-3 - Provided a representative Joint Task Force (JTF) Headquarters node within the Enterprise Cyber Range Environment (ECRE) to assess C2 system vulnerabilities to red team exploitation and improve blue team responses. CYBERCOM Project C; White Cell Facility and Training Support – Provided selected systems to assess system vulnerabilities to red team exploitation. DoD Information Assurance (IA) Range C2 Systems Support – Provided selected systems to assess system vulnerabilities to red team exploitation.				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Navy Cyber Defense Operations Command Facility Support – Provided selected systems to assess system vulnerabilities to red team exploitation. Coalition Validation and Verification Environment (C2VE) – Establishing a persistent operational/technical assessment capability in support of Combatant Command and Coalition interoperability requirements. Results: Upkeep, maintenance, and currency of the persistent environment that includes: 27 internal local area networks (Unclass, Secret, TS/SCI, and Coalition), 9 operational, 6 research and development and 3 test and assessment wide area networks, 22 U.S. C2 Systems, 5 Coalition C2, 4 C2 Services, 24 Core Admin Services, 6 Cross Domain Baseline Services, 5 Cyber Environment C2Systems, 6 IA/Cyber Security Guard Services, 11 IA/Cyber Security Services, 30 Instrumentation Tools, and 30 Servers. FY 2015 Plans: Interoperability Assessments(IA) and Interoperability Technology Demonstration Center (ITDC) Continue the efforts initiated for FY 2014 and respond to unpredictable operational issues and shortfalls. Interoperability assessments will be conducted to solve warfighter problems, including coalition challenges. FY 2015 assessment objectives remain focused on; Cyberspace, Mission Partner Environment, Common Operational Picture, Wireless to the Tactical Edge, Joint Fires Capabilities, Data Strategy Implementation, and Information Sharing Capabilities. Bold Quest (BQ) 2015 Support – Design, accredit, install, operated and maintain the BQ15 exercise network. C2 Common Operating Picture (COP) Support and Assessment to CYBERFLAG (CF) 2015-1 – Provide C2 systems, a common operational picture, and assessment of cyber attacks on Global Command and Control System – Joint (GCCS-J). Automated NATO Database Interface (ANDI) Interoperability Assessment – Continue assessing the automated exchange of targeting data between the U.S. Modernized Integrated Database (MIDB) and the NATO Integrated Command and Control Database (ICCDB). Tactical Infrastructure Enterprise Services (TIES) Coalition Warfare Program (CWP) Interoperability Assessment – Assessing the capability of sharing data from authoritative data sources using web services in a C2 Core conformant, standardized data format.				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Tactical Infrastructure Enterprise Services (TIES) Joint Capability Technical Demonstration (JCTD) Interoperability Assessment - Assessing the capability of sharing data from authoritative data sources using web services in a C2 Core conformant, standardized data format.				
Joint Fire Support (JFS) Joint Mission Thread (JMT) Interoperability Assessment – Continue assessing JFS system of systems interoperability across user, decision maker, and Service boundaries.				
Mission Partner Environment (MPE) Federated Mission Networking (FMN) Joining, Membership and Exit Instructions (JMEI) Assessments – Continue assessing developing JMEIs to implement MPE in an operational venue.				
Coalition Warrior Interoperability Exploration, Experimentation, Examination Exercise Interoperability Assessments – Conduct interoperability assessments between selected systems during CWIX 2015 event.				
Mission Partner Environment (MPE) Federated Mission Networking (FMN) Coalition Interoperability Assurance and Validation (CIAV) Assessments – Continue interoperability assessment of coalition systems supporting coalition mission threads in a coalition/joint environment.				
Operation Resolute Support Coalition Interoperability Assurance and Validation (CIAV) Post International Assistance Force Afghanistan – Support further identification, assessment and resolution of coalition interoperability and integration problems affecting mission threads.				
Joint Cross Domain eXchange (JCDX) Interoperability Assessment – Assess that JCDX version xx is interoperable with Global Command and Control System – Joint (GCCS-J) version xx.				
Mission Partner Environment (MPE) Network Integration Evaluation (NIE) 15 Analysis Support – Provide analysis that the Army's future network is interoperable with Joint, Multinational and Interagency network capabilities.				
Joint Command and Control (JC2) Common User Interface (CUI) / Enterprise Storefront (ES) Capability Assessment – Continue assessing JC2 CUI/ES capability in an operational context to support decision-making, planning, and situational awareness.				
Friendly Force Tracking (FFT) Assessment Support – Assess U.S. and Allied ground to air situational awareness systems and capabilities.				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Joint Information Environment (JIE) Service Compliance Assessment – Support the assessment of the Services compliance with implementing the JIE. Technical Assessments and Integration (TA&I) Continue FY 2014 initiatives investigating impacts of technology advances in wireless devices, mesh and ad-hoc networking, satellite modem technology, and small lightweight secure digital capabilities on warfighter command and control capabilities and match emerging critical warfighter requirements with the technologies to identify near-term technology solutions supporting Combatant Commanders. Areas of concentration include Wireless to the Tactical Edge Integration and Common Operational Picture. Joint Operational Long Term Evolution Deployable (JOLTED) Tactical Cellular System (TACTICS) Joint Capability Technical Demonstration (JCTD) - Technical Manager – JOLTED TACTICS is an Internet Protocol (IP) based system designed to provide robust communications to tactical users. This system leverages innovations in Fourth Generation (4G) LTE Cellular technologies and mobile Ka band spread spectrum satellite communications to deliver megabits of data to mobile and dismounted teams armed with mobile devices such as smartphones or netbooks. C2 Applications over Broadband Cellular (C2 ABC) Integration and Assessment – Integrating and assessing emerging C2 and tailored applications using broadband cellular technologies to provide the warfighter at the tactical edge with expanded situational awareness. National Security Agency (NSA) Commercial Solutions for Classified (CSfC) Secure Wireless Local Area Network (SWLAN) Integration Assessment – Assisting the National Security Agency in the development and assessment of a Suite B software encryption solution. This capability supports communicating over SECRET wireless networks without using Type-1 hardware solutions (e.g., SecNet 54, Talon, or KG-250s). Tactical Mobility Security Integration and Assessment (TMSIA) Spiral II – In partnership with the National Security Agency integrating a security architecture for lightweight, man-portable communications-on-demand packages that allow the user to quickly establish secure 4G cellular wireless networks. Broad Band Cellular Integration (B2CI) – Provide integration support for broad band cellular or other 4G based capabilities. Persistent Command and Control Environment				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continue FY 2014 initiatives by engaging the Services and Communities of Interest (COI) to leverage the capabilities of the Persistent Command and Control Environment by bringing joint solutions through C4AD's integration and operational assessment process. Provide a comprehensive Joint Task Force (JTF) environment required to also support cyber training, cyber capability development, and cyber assessment by expanding the connectivity and capability of the existing persistent environment to support the Enterprise Cyber Range Environment (ECRE) focused on user requirements, architectures, standards, measures, metrics, instrumentation, and data collection requirements.				
C4AD Project Engineering Support – Provide infrastructure, communications, network, information assurance, security, and engineering support as required.				
Navy Cyber Defense Operations Command Facility Support – Provide selected systems to assess system vulnerabilities to red team exploitation.				
C2 Support to the Cyber Persistent Test and Training Environment (PTTE) – Provide selected systems to assess system vulnerabilities to red team exploitation.				
Cyber Assessment Event Number 3 - Provide a representative Joint Task Force (JTF) Headquarters node within the Enterprise Cyber Range Environment (ECRE) to assess C2 system vulnerabilities to red team exploitation and improve blue team responses.				
Cyber Assessment Event Number 4 and 5 - Provide a representative Joint Task Force (JTF) Headquarters node within the Enterprise Cyber Range Environment (ECRE) to assess C2 system vulnerabilities to red team exploitation and improve blue team responses.				
Accomplishments/Planned Programs Subtotals		3.834	7.002	-
D. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
E. Acquisition Strategy N/A				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 The Joint Staff		Date: February 2015
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<u>Remarks</u> N/A: Consolidating to new PE in FY2016 - reference PE0604826J		

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 The Joint Staff																Date: February 2015			
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)			
0400 / 4								PE 0604787J / Joint Systems Integration								P787 / Joint Systems Integration			

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 The Joint Staff			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604787J / <i>Joint Systems Integration</i>	Project (Number/Name) P787 / <i>Joint Systems Integration</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Consolidation				
Consolidating to new PE in FY2016 - reference PE0604826J	1	2016	1	2016

Note

N/A: Consolidating to new PE in FY2016 - reference PE0604826J