Exhibit R-2, RDT&E Budget Item Justification: PB 2015 The Joint Staff

Date: March 2014

Appropriation/Budget Activity

0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4:

R-1 Program Element (Number/Name)
PE 0604787J / Joint Systems Integration

Advanced Component Development & Prototypes (ACD&P)

COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO <sup>#</sup>	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	0.000	3.230	7.402	7.002	-	7.002	6.839	6.938	7.086	7.086	Continuing	Continuing
P787: Joint Systems Integration	0.000	3.230	7.402	7.002	-	7.002	6.839	6.938	7.086	7.086	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

<sup>&</sup>lt;sup>#</sup> The FY 2015 OCO Request will be submitted at a later date.

#### 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 Command, Control, Communications, and Computers (C4) directorate (J6) to conduct interoperability assessments, and develop solutions/recommendations to improve integration of Service, Defense Agency, and coalition systems.

C4 Assessments performed in the Persistent Command and Control Environment replicate 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. This capability 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, C4 Assessments 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.

PE 0604787J: *Joint Systems Integration*The Joint Staff

Page 1 of 10

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 The Joint Staff

R-1 Program Element (Number/Name)

Date: March 2014

Appropriation/Budget Activity

0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)

PE 0604787J I Joint Systems Integration

FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
3.273	7.402	7.009	-	7.009
3.230	7.402	7.002	-	7.002
-0.043	-	-0.007	-	-0.007
-0.043	-			
-	-			
-	-			
-	-			
-	-			
-	-			
-	-			
-	-	-0.007	-	-0.007
	3.230 -0.043	3.273 7.402 3.230 7.402 -0.043 -	3.273 7.402 7.009 3.230 7.402 7.002 -0.0430.007 -0.043	3.273 7.402 7.009 - 3.230 7.402 7.0020.0430.0070.043

#### **Change Summary Explanation**

Additional resources allocated to support mission requirements that transitioned to the Joint Staff after U.S. Joint Forces Command (JFCOM) disestablishment.

FY 2014 Changes:

In FY 2014, funding transferred out of TJS O&M account to RDT&E to more appropriately fund the Joint Systems Integration mission to conduct interoperability assessments and develop solutions to improve integration of Services, Defense Agencies, and coalition Command, Control, Communication, and Computer (C4) systems.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
Title: Interoperability Assessments (IA) and Interoperability Technology Demonstration Center (ITDC)	1.233	2.894	2.738
<b>Description:</b> Primary outcome for this effort is seamless interoperability between DoD and coalition C2 systems supporting the warfighter. IA supports the interoperability assessment of systems in five categories: operational, system of systems, technical, software, and procedural. These assessments provide supporting justification for continued development of a program within the acquisition system and resolve capability shortfalls of fielded systems.			
FY 2013 Accomplishments:  (1) Continued the efforts initiated for FY 2012 and responded to unpredictable operational issues and shortfalls. Interoperability assessments were conducted to solve warfighter problems, including coalition challenges. FY 2013 assessment objectives were focused on: Information Sharing Capabilities, Intelligence support to Command and Control, Joint Fires Capabilities, Data Strategy Implementation, Tactical Edge Integration, and Cyberspace.			

PE 0604787J: *Joint Systems Integration*The Joint Staff

UNCLASSIFIED
Page 2 of 10

U	NCLASSIFIED			
Exhibit R-2, RDT&E Budget Item Justification: PB 2015 The Joint Staff		Date: N	larch 2014	
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)	·			
C. Accomplishments/Planned Programs (\$ in Millions)	Γ	FY 2013	FY 2014	FY 2015
(2) Afghanistan Mission Network (AMN) Coalition Interoperability Assurance Coalition, Command, Control and Communication and Computer, Intelligence network for International Security Assistance Forces (ISAF) in Afghanistan. (Mission Threads (CMTs) and Coalition Tactics, Techniques and Procedures problems. FY 2013 AMN mission areas included: Joint ISR, Battlespace Ma	e, Surveillance, and Reconnaissance (C5ISR) C4AD is supporting the assessment of Coalition (CTTPs) to identify and correct ISAF interoperability			
(3) Bold Quest 2013 (BQ13) Technical Support and Interoperability Assessm identified deficiencies of select systems during BQ13 operational venues.	ents – Assessed interoperability and documented			
(4) Joint Fires Support Joint Mission Thread (JFS JMT) – Assessed and docus system interoperability matrix. Fire support systems evaluated include: Adva Distributed Command Ground Station (DCGS), Joint Automated Deep Opera Management Core System (TBMCS), and Joint Targeting Tool-Kit (JTT).				
(5) Unified Cross Domain Management Office (UCDMO) Enterprise Cross Do Interoperability Assessment – Conducted a capability assessment of the Owl functional strengths and weaknesses against UCDMO prescribed criteria.				
(6) Coalition Warrior Interoperability Experiment (CWIX) 2013 Interoperability assessments between selected systems within the following mission areas; CReconnaissance (ISR), and Coalition Ballistic Missile Defense during the Coalition Coalition Ballistic Missile Defense during the Coalition Coalition Ballistic Missile Defense during the Coalition Coalition Coalition Ballistic Missile Defense during the Coalition	Coalition Fires, Coalition Intelligence, Surveillance,			
(7) Joint Cross Domain eXchange (JCDX) Interoperability Assessment – Assedesigned to exchange the common operational picture and support record/tag forces.				
(8) NATO Modeling & Simulation Centre of Excellence (M&S COE) – U.S. Co – Assessed the exchange of C2 data between the U.S. Global Command and Sistema Automatizzato di Commando e Controllo (SIACCON) system. SIAC management support across a range of functions for the Italian Army.	d Control System Joint (GCCS-J) and the Italian			
(9) Automated NATO Database Interface (ANDI) Interoperability Assessment Command and Control System-Joint (GCCS-J) targeting application and the system.				

PE 0604787J: *Joint Systems Integration* The Joint Staff

UNCLASSIFIED
Page 3 of 10

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 The Joint Staff		Date: N	larch 2014				
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 / Joint Systems Integration						
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015			
(10) JC2 Map-based Adaptive Planning Course of Action Tool (MAPCAT) To MAPCAT using USEUCOM and service components to determine the operation							
(11) Network Effects Emulation System Technical Assessment (NE2S TA) – validate functionality and performance.	Conducted a technical assessment of NE2S to						
(12) Mission Partner Environment (MPE) Joining, Membership and Exit Instr group of JMEI templates during Exercise Combined Endeavor.	ructions (JMEI) Assessments – Assessed baseline						
assessments will be conducted to solve warfighter problems, including coalit	FY 2014 Plans:  (1) Continue the efforts initiated for FY 2013 and respond to unpredictable operational issues and shortfalls. Interoperability assessments will be conducted to solve warfighter problems, including coalition challenges. FY 2014 assessment objectives are focused on: Cyberspace, Mission Partner Environment, Common Operational Picture, Wireless to the Tactical Edge, Joint Fires						
(2) Afghanistan Mission Network (AMN) Coalition Interoperability Assurance – AMN is the primary Coalition, Command, Control and Communications and Reconnaissance (C5ISR) network for International Security Assistance Force assessment of Coalition Mission Threads (CMTs) and Coalition Tactics, Teccorrect interoperability problems.	d Computers, Intelligence, Surveillance, and es (ISAF) in Afghanistan. C4AD is supporting the						
(3) Bold Quest 2014 (BQ14) Technical Support and Interoperability Assessmidentified deficiencies of select systems within the joint fires mission thread of							
(4) Digitally-Aided Joint Fires Support and Assessment – Assess the implem Support (CAS) mission execution.	entation of various messaging standards for Close Air						
(5) Coalition Interoperability Assessments – Conduct interoperability assessr Warrior Interoperability Experiment (CWIX) 2014 event.	ments between selected systems during the Coalition						
(6) Deliberate and Dynamic Targeting Interoperability Assessment – Assess Exercise Terminal Fury 2014.	the system interoperability of selected systems during						

PE 0604787J: *Joint Systems Integration* The Joint Staff

UNCLASSIFIED
Page 4 of 10

U	NCLASSIFIED			
Exhibit R-2, RDT&E Budget Item Justification: PB 2015 The Joint Staff		Date: M	larch 2014	
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
(7) C4-Intelligence, Surveillance, Reconnaissance (C4ISR) Interoperability Assystems to Global Command and Control System-Joint (GCCS-J).	ssessments – Assess interoperability of Service			
(8) Unified Cross Domain Management Office (UCDMO) Enterprise Cross Do Conduct a capability assessment of the specified ECDS, measuring the func- prescribed criteria.				
(9) Mission Partner Environment (MPE) U.S. Development and Assessment Development and Support – Provide interoperability assessments of selected				
(10) Network Integration Evaluation (NIE) Interoperability Assessment – Assecapabilities in a robust operational environment.	ess potential networked and non-networked			
(11) Tactical Infrastructure Enterprise Services (TIES) Coalition Warfare Programme the capability of sharing data from authoritative data sources using web serviformat.				
(12) Distributed Common Ground System-Army (DCGS-A) Interoperability Asto the Modernized Integrated Database (MIDB).	ssessment – Assess DCGS-A v3.1.7 (3.2x) interface			
FY 2015 Plans: Continue the efforts initiated for FY 2014 and respond to unpredictable opera assessments will be conducted to solve warfighter problems, including coaliti remain focused on: Cyberspace, Mission Partner Environment, Common Operices Capabilities, Data Strategy Implementation, and Information Sharing Ca	on challenges. FY 2015 assessment objectives erational Picture, Wireless to the Tactical Edge, Joint			
Title: Technical Assessments and Integration (TA&I)		1.080	2.429	2.297
<b>Description:</b> Primary Outcome (objective) for this effort is near-term technical of operational capabilities that address near-term operational and tactical requipment, and technical personnel to integrate emerging technologies.				
FY 2013 Accomplishments:  (1) Continued initiatives investigating technology advances in wireless device technology, and small lightweight secure digital capabilities on warfighter continued.				

PE 0604787J: *Joint Systems Integration* The Joint Staff

UNCLASSIFIED
Page 5 of 10

· · · · · · · · · · · · · · · · · · ·	INCLASSIFIED			
Exhibit R-2, RDT&E Budget Item Justification: PB 2015 The Joint Staff		Date: N	March 2014	
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
critical warfighter requirements with the technologies to identify near-term so concentration included Tactical Edge Integration and Joint Command and Co				
(2) Celestial Reach Joint Capability Technical Demonstration (JCTD) Assess joint air, ground, and maritime operations and assessed the capability's utility Command and Control (C2) and Intelligence Surveillance and Reconnaissan	y in providing wide-band communications that support			
(3) National Security Agency (NSA) Commercial Solutions for Classified (CS Integration Assessment – Assisted NSA in the development and assessment capability supported communicating over SECRET wireless networks withou Talon, or KG-250s).	t of a Suite B software encryption solution. This			
(4) Air/Event Information Sharing Service (A/EISS) Integration Assessment – that fuses and shares decision support data from national level authoritative time-critical decisions during air events over North America via desktop or me	sources enabling senior decision makers to make			
(5) C2 Applications over Broadband Cellular (C2 ABC) Integration and Assestailored applications using broadband cellular technologies to provide the waawareness.				
(6) Joint Operational Long Term Evolution Deployable (JOLTED) Tactical Ce JOLTED TACTICS is an Internet Protocol (IP) based system designed to prosystem leverages innovations in Fourth Generation (4G) LTE Cellular technology communications to deliver megabits of data to mobile and dismounted teams netbooks.	ovide robust communications to tactical users. This ologies and mobile Ka band spread spectrum satellite			
(7) Tactical Mobility Security Integration and Assessment (TMSIA) Spiral II – Agency a security architecture for lightweight, man-portable communications establish secure 4G cellular wireless networks.				
FY 2014 Plans:  (1) Continue FY 2013 initiatives investigating impacts of technology advance satellite modem technology, and small lightweight secure digital capabilities and match emerging critical warfighter requirements with the technologies to	on warfighter command and control capabilities			

PE 0604787J: *Joint Systems Integration* The Joint Staff

UNCLASSIFIED
Page 6 of 10

·	INCLASSIFIED			
Exhibit R-2, RDT&E Budget Item Justification: PB 2015 The Joint Staff		Date: N	March 2014	
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 / Joint Systems Integration	·		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
Combatant Commanders. Areas of concentration include Wireless to the Ta Operational Picture.	actical Edge Integration, Cyberspace, and Common			
(2) Joint Operational Long Term Evolution Deployable (JOLTED) Tactical Concentration (JCTD) - Technical Manager – JOLTED TACTICS is an Interprobust communications to tactical users. This system leverages innovations and mobile Ka band spread spectrum satellite communications to deliver meaning with mobile devices such as smartphones or netbooks.	net Protocol (IP) based system designed to provide in Fourth Generation (4G) LTE Cellular technologies			
(3) C2 Applications over Broadband Cellular (C2 ABC) Integration and Asset tailored applications using broadband cellular technologies to provide the was awareness.				
(4) Celestial Reach Joint Capability Technical Demonstration (JCTD) Assess solution for joint air, ground, and maritime operations and assessing the cap that support Command and Control (C2) and Intelligence Surveillance and R	ability's utility in providing wide-band communications			
(5) National Security Agency (NSA) Commercial Solutions for Classified (CS Integration Assessment – Continue assisting NSA in the development and at This capability supports communicating over SECRET wireless networks wit 54, Talon, or KG-250s).	ssessment of a Suite B software encryption solution.			
(6) Tactical Mobility Security Integration and Assessment (TMSIA) Spiral II – Security Agency a security architecture for lightweight, man-portable communically establish secure 4G cellular wireless networks.				
(7) Broad Band Cellular System Integration (B2CI) – Integrate cellular technology communications to deliver megabits of data to dismounted users equipped v				
FY 2015 Plans: Continue FY 2014 initiatives investigating impacts of technology advances in satellite modem technology, and small lightweight secure digital capabilities to match emerging critical warfighter requirements with the technologies to in	on warfighter command and control capabilities			

PE 0604787J: *Joint Systems Integration* The Joint Staff

UNCLASSIFIED
Page 7 of 10

UN	ICLASSIFIED			
Exhibit R-2, RDT&E Budget Item Justification: PB 2015 The Joint Staff		Date: N	larch 2014	
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 / Joint Systems Integration			
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
Combatant Commanders. Areas of concentration include Wireless to the Tact Picture.	ical Edge Integration and Common Operational			
Title: Persistent Command and Control Environment		0.917	2.079	1.967
<b>Description:</b> The persistent command and control environment provides a reclaboratory that supports the rapid assessment and integration of existing and encompartment and allied partners to collaborately assess capability and interoper when connected with other joint service agencies and coalition laboratories proassessment and engineering environment.	emerging C4 capabilities. It is a venue for the rability of current and future warfighting systems and			
FY 2013 Accomplishments: Continued initiatives by engaging the Services and Communities of Interest (C Command and Control Environment by bringing joint solutions through C4AD's Also continue to expand existing relationships with Service and Coalition laborates.	s integration and operational assessment process.			
Cyber Assessment Event Number 1 – Provided a command and control node (ECRE) to facilitate replication of Joint C2 events for assessment of C2 system improvement of blue team responses.				
C4AD Project Engineering Support – Provided infrastructure, communications, engineering support as required.	network, information assurance, security, and			
FY 2014 Plans:  (1) Continue FY 2013 initiatives by engaging the Services and Communities of Persistent Command and Control Environment by bringing joint solutions throu process. Provide a comprehensive Joint Task Force (JTF) environment requir development, and cyber assessment by expanding the connectivity and capab support the Enterprise Cyber Range Environment (ECRE) focused on user requirements, instrumentation, and data collection requirements.	righ C4AD's integration and operational assessment red to also support cyber training, cyber capability of the existing persistent environment to			
(2) C4AD Project Engineering Support – Provide infrastructure, communication engineering support as required.	ns, network, information assurance, security, and			

PE 0604787J: *Joint Systems Integration* The Joint Staff

UNCLASSIFIED
Page 8 of 10

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 The Joint Staff		Date: March 2014
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4:	PE 0604787J I Joint Systems Integration	
Advanced Component Development & Prototypes (ACD&P)		

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
(3) Cyber Assessment Event Number 1 – Continue providing 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.			
(4) Cyber Assessment Event Numbers 2-5 – 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.			
FY 2015 Plans:			
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.			
	0.000	7.400	7.000
Accomplishments/Planned Programs Subtotals	3.230	7.402	7.002

### D. Other Program Funding Summary (\$ in Millions)

N/A

#### Remarks

### E. Acquisition Strategy

C4AD supports interoperability of systems selected for acquisition, integration and fielding. C4AD is a forcing function to discover and provide interoperable joint solutions as a means to foster rapid, near-term insertion of command and control and cyber technology by promoting the ability to meet the DoD direction for spiral development and evolutionary acquisition. Services and Defense Agencies are responsible for conducting acquisition activities in Programs of Record (POR).

#### F. Performance Metrics

FY 2013 Strategic Goals Supported: Chairman's Priorities to "Achieve our National Objectives in our Current Conflicts and Develop Joint Force 2020":

- (1) Drove resolution of C4 interoperability problems with actionable recommendations stemming from technical and operational assessments of existing and emerging C4 capabilities.
- (2) Integrated and assessed technical solutions that provide gap-filling capabilities to satisfy near-term operational requirements.
- (3) Replicated an operational Joint Task Force Headquarters Environment to support interoperability, cybersecurity, and integration assessments.
- (4) Achieved planned body of work in support of the Chairman's priorities in a fiscally constrained environment.

PE 0604787J: *Joint Systems Integration*The Joint Staff

Exhibit R-3, RDT&E	Project C	ost Analysis: PB 2	2015 The	Joint Stat	ff							Date:	March 20	)14	
Appropriation/Budget Activity 0400 / 4												Project (Number/Name) P787 I Joint Systems Integration			
Product Developme	nt (\$ in M	illions)		FY 2	013	FY 2	014	FY 2 Ba			2015 CO	FY 2015 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	Total Cost	Target Value of Contract
General/Contractor Engineering Support	C/CPFF	General Dynamics : Hampton Roads, VA	-	1.297		4.102		3.384		-		3.384	Continuing	Continuing	_
Government Engineering Support	MIPR	Various DoD : Various DoD	-	0.392		0.700		0.935		-		0.935	Continuing	Continuing	_
Travel	TBD	Various DoD : Various DoD	-	0.134		0.300		0.134		-		0.134	-	-	-
		Subtotal	-	1.823		5.102		4.453		-		4.453	-	-	-
Support (\$ in Million	ıs)			FY 2	013	FY 2	014	FY 2 Ba			2015 CO	FY 2015 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	Total Cost	Target Value of Contract
Government Communications Support	MIPR	Various DoD : Various DoD	-	0.252		0.300		0.332		-		0.332	Continuing	Continuing	-
PC4 Environment/ Laboratories	Various	Various : Various	-	1.155		2.000		2.217		-		2.217	Continuing	Continuing	-
		Subtotal	-	1.407		2.300		2.549		-		2.549	-	-	-
			Prior Years	FY 2	013	FY 2	014	FY 2 Ba			2015 CO	FY 2015 Total	Cost To	Total Cost	Target Value of Contract

Remarks

PE 0604787J: *Joint Systems Integration* The Joint Staff

Project Cost Totals

3.230

UNCLASSIFIED
Page 10 of 10

7.402

7.002

R-1 Line #107

7.002