

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software							
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	-	22.900	29.675	163.643	-	163.643	188.956	199.922	181.618	85.239	Continuing	Continuing
323: Common Hardware Systems	-	5.617	4.504	4.779	-	4.779	5.024	5.226	5.569	6.855	Continuing	Continuing
334: Common Software	-	1.404	8.319	18.440	-	18.440	25.293	28.389	38.967	9.494	Continuing	Continuing
C29: Centralized Technical Support Facility (CTSF)	-	4.615	7.874	3.203	-	3.203	-	-	-	-	-	15.692
C34: Army Tac C2 Sys Eng	-	11.264	8.978	9.046	-	9.046	9.194	9.286	9.331	9.431	Continuing	Continuing
EJ4: COMMAND POST COMPUTING ENVIRONMENT (CPCE)	-	-	-	70.483	-	70.483	83.373	102.233	72.468	4.963	79.058	412.578
EJ5: MOUNTED COMPUTING ENVIRONMENT (MCE)	-	-	-	12.370	-	12.370	15.669	18.798	16.994	7.839	-	71.670
EJ6: TACTICAL ENHANCEMENT	-	-	-	13.278	-	13.278	12.024	-	-	-	-	25.302
EJ7: TACTICAL DIGITAL MEDIA	-	-	-	1.300	-	1.300	2.500	-	-	-	-	3.800
EK9: TACTICAL NETWORK OPERATIONS AND MANAGEMENT	-	-	-	30.744	-	30.744	35.879	35.990	38.289	46.657	-	187.559
Note The \$122.047 million increase in FY 2016 represents funding for the following new projects: EJ4 Command Post Computing Environment - This is not a new start. Funds are being realigned from PE/Project 0203740A/484. EJ5 Mounted Computing Environment - This is not a new start. Funds are being realigned from PE/Project 0604805A/593. EJ6 Tactical Enhancement EJ7 Tactical Digital Media EK9 Tactical Network Operations and Management												
A. Mission Description and Budget Item Justification The Common Hardware Systems (CHS) program acquires and sustains highly flexible, state-of-the-art, cost effective, common, and simplified non-developmental C5ISR solutions that improve interoperability and connectivity on the battlefield while garnering efficient competition to integrate the latest commercial technology onto the Army												

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	
tactical network. CHS provides technical support, common standardized testing and system design / configuration management across Army tactical programs to ensure interoperability and integration of hardware throughout the development of capabilities, to facilitate and simplify the selection of common hardware solutions across the operational battlefield and to create efficiencies through streamlined common hardware configurations across the Common Operating Environments (COE)s. Common Software (CS) is the suite of systems through which the Army develops, integrates and tests common software products and/or components used for communication between Army Mission Command Systems and Joint and coalition Command and Control (C2) applications. The CS project provides state-of-the-art software technologies and functionality that is used by numerous Mission Command (MC) and joint systems to eliminate the need for service independent development and duplication of effort. The CS project also manages and performs technology demonstrations of emerging technologies for future use by Army C2 systems. The CS program is a cornerstone in the Army's COE modernization efforts. This program element also includes the Central Technical Support Facility (CTSF) which is the Army's single strategic facility responsible for executing Army Interoperability Certification (AIC) system of system verification/validation checkout, testing, and configuration management for the Army's LandWarNet Baseline. The Technical Management Division (TMD) effectively manages the System-of-Systems engineering, Enterprise and Integration efforts for the continuing evolution of the network within the Program Executive Office Command, Control, Communication and Tactical (PEO C3T) portfolio of technology across the capability enhancement packages to deliver efficient and effective cross-domain technical solutions. The Mounted Computing Environment (MCE) is one of the six computing environments formalized by the AAE under the Common Operating Environment (COE) via the AAE Directive to Program Executive Offices dated 20 December 2011. MCE standardizes end-user environments and enables streamlined deployment of new warfighting applications. The Joint Battle Command - Platform (JBC-P) is the foundational element and core software platform of the MCE. Future development of the MCE will leverage JBC-P hardware and software to consolidate and integrate multiple warfighting systems in the Platform (Mounted) environment and will speed delivery of new Mission Command applications to the warfighter while improving the effectiveness and value of current systems. In FY 2016, these funds are being realigned from PE/Project 0203740A/484. The Command Post Computing Environment (CPCE), one of the computing environments under the Common Operating Environment (COE), provides a common foundation (Common Infrastructure / Common Services) for Warfighter Capabilities. The CPCE establishes a Common Core Software Baseline and Hardware Configuration upon which future Warfighter capabilities can be built. The CPCE targets Command and Control (C2) capability development at tactical echelons that span from the company to all Army Service Component Commands (ASCC). The CPCE will be the most critical computing environment developed to support the command posts and combat operations. In FY 2016, these funds are being realigned from PE/Project 0604805A/593. Tactical Digital Media (TDM) is comprised of photo, video and audio recording and editing equipment that will be assembled and issued as variant kits tailored to unit mission requirements. TDM kits address modernization gaps associated with all operational Combat Camera (COMCAM), Public Affairs (PA), and Military Information Support Operations (MISO) units. TDM provides essential imagery, multimedia products, and live interview capabilities that directly contribute to successful execution of a Commander's strategic engagement and communications strategy across the full range of military operations.		

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				
Tactical Network Operations (NetOps) and Management (TNOM) is the program which will develop and integrate the Tactical NetOps software capabilities in support of NetOps Convergence, PEO C3T STARNET objectives and emerging Cyber Center Of Excellence (CCOE) requirements. The end state program is designed to synchronize LandWarNet NetOps efforts in an integrated and interoperable framework, spanning all echelons of command and supporting the full range of military operations for Army, Joint, and Coalition Forces in order to ensure converged NetOps. The initial mission is convergence of all Tactical Defensive Cyber Operations (DCO) and DoD Information Network (DoDIN) functions into a single integrated set of Tactical NetOps and Management software. This integrated solution provides NetOps capability from the Soldier to the Theater network entry point and supports the Implementation of the Integrated Tactical NetOps (ITNO) Capability Production Document (CPD). Tactical Enhancement supports testing requirements for capabilities procured and fielded under the Signal Modernization Program. Signal Modernization will modernize legacy terrestrial communications links and increase capacity of the Expeditionary Signal Battalions. It will also provide transport convergence for Warfighter Information Network- Tactical (WIN-T) Increment 1 units, bringing Top Secret Intel, Medical, and Sustainment capabilities from their legacy stovepipe transport systems on to the WIN-T network.						
B. Program Change Summary (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		22.945	29.683	41.596	-	41.596
Current President's Budget		22.900	29.675	163.643	-	163.643
Total Adjustments		-0.045	-0.008	122.047	-	122.047
• Congressional General Reductions		-	-0.008			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-	-			
• Adjustments to Budget Years		-0.045	-	122.047	-	122.047

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) 323 / Common Hardware Systems			
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
323: Common Hardware Systems	-	5.617	4.504	4.779	-	4.779	5.024	5.226	5.569	6.855	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Common Hardware Systems (CHS) program acquires and sustains highly flexible, customized, cost effective, common, and simplified non-developmental C5ISR solutions that improve interoperability and connectivity on the battlefield while garnering efficient competition to integrate the latest commercial technology onto the Army tactical network. CHS provides technical support, environmental testing and system design / configuration management across Army tactical programs to ensure interoperability and integration of hardware throughout the development of capabilities. CHS hardware evaluations facilitate and simplify the selection of common hardware solutions across the operational battlefield and create efficiencies through streamlined common hardware configurations across the Common Operating Environments (COE)s. CHS also provides worldwide 72-hour turnaround repair, maintenance, logistics, and technical support services through strategically located support centers for tactical military units and manages customizable warranty for program specific requirements.												
FY 2016 funds support CHS to continue to manage the acquisition and delivery of CHS equipment and technology insertion in support of customer requirements, and continues to support hardware and systems engineering, and evaluations. CHS will continue CHS-5 contract pre-award activities.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Acquisition Management, System/ Configuration Management, and technical evaluation and testing of CHS equipment and services in support of program requirements Description: Funding is provided for the following effort FY 2014 Accomplishments: Continued the management of the acquisition/delivery, System/ Configuration Management, and technical evaluation and testing of CHS equipment in support of customer requirements FY 2015 Plans: Will continue the management of the acquisition/delivery, System/ Configuration Management, and technical evaluation and testing of CHS equipment in support of customer requirements FY 2016 Plans: Will continue the management of the acquisition/delivery, System/ Configuration Management, and technical evaluation and testing of CHS equipment in support of customer requirements									5.117	3.904	3.929	
Title: CHS Technology Insertion in support of program capability requirements									0.500	0.600	0.600	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) 323 / Common Hardware Systems	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Description: Funding is provided for the following effort FY 2014 Accomplishments: Continued CHS Technology Insertion in support of program capability requirements FY 2015 Plans: Continue CHS Technology Insertion in support of program capability requirements FY 2016 Plans: Continue CHS Technology Insertion in support of program capability requirements			
Title: Non Recurring Engineering (NRE) Costs for New CHS-5 Products Description: Funding is provided for the following effort FY 2016 Plans: Non Recurring Engineering (NRE) Costs for New CHS-5 Products		-	-
Accomplishments/Planned Programs Subtotals		5.617	4.779
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
The overall goal is to improve interoperability and compatibility and lower life cycle costs by standardizing battlefield command and control automation and other warfighting systems (net centric, etc) through centralized buys of modified/ruggedized non-developmental items. This project provides a coherent migration strategy for acquisition of warfighting systems through the use of technology insertion. CHS also conducts common environmental and developmental testing of hardware items thereby reducing the testing requirements for individual Project Managers. An Indefinite Delivery/Indefinite Quantity firm fixed priced, full and open competition contract was awarded to General Dynamics in May 2003, for ruggedization and production. In August 2011, CHS awarded, on a best value basis, the follow-on CHS-4 contract via full and open competition. CHS-5 is to be awarded in FY16 to provide flexibility for Tactical Programs of Record (PoR)s to meet hardware and associated services requirements through full and open competition and to provide an agile solution to support COE, network integration activities, capability set development, and transport needs.			
E. Performance Metrics			
N/A			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) 323 / Common Hardware Systems				

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Support Costs	C/FP	Various : Various	75.168	2.478		2.130	Dec 2014	1.975	Dec 2015	-		1.975	Continuing	Continuing	Continuing
Product Development	C/FP	Various : Various	84.151	2.639		1.774	Dec 2014	1.954	Dec 2015	-		1.954	Continuing	Continuing	Continuing
Technology Insertion	C/FP	Various : Various	15.277	0.500		0.600	Dec 2014	0.600	Dec 2015	-		0.600	Continuing	Continuing	Continuing
CHS-5 Non-Recurring Engineering	C/FP	Various : Various	0.000	-		-		0.250	Mar 2016	-		0.250	-	0.250	-
Subtotal			174.596	5.617		4.504		4.779		-		4.779	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	174.596	5.617		4.504		4.779		-		4.779	-	-	-

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software								Project (Number/Name) 323 / Common Hardware Systems												
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Technology Insertion (Adding New Hardware to Contract)																												
CHS-3 Hardware Deliveries																												
Environmental and First Article Testing																												
OFS Support																												
RESET and Deep Cleaning/Out of Warranty Repair																												
HW Implementation, Integration and Evaluation																												
CHS-4 Hardware Deliveries																												
(1) CHS-5 Contract Award																												
CHS-5 Hardware Deliveries																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / <i>Army Tactical Command & Control Hardware & Software</i>	Project (Number/Name) 323 / <i>Common Hardware Systems</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Technology Insertion (Adding New Hardware to Contract)	1	2007	4	2020
CHS-3 Hardware Deliveries	2	2004	2	2014
Environmental and First Article Testing	1	2006	4	2020
OFS Support	1	2006	4	2014
RESET and Deep Cleaning/Out of Warranty Repair	1	2006	4	2020
HW Implementation, Integration and Evaluation	1	2006	4	2020
CHS-4 Hardware Deliveries	1	2012	2	2017
CHS-5 Contract Award	2	2016	2	2016
CHS-5 Hardware Deliveries	4	2016	4	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) 334 / Common Software			
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
334: Common Software	-	1.404	8.319	18.440	-	18.440	25.293	28.389	38.967	9.494	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Not applicable for this item.												
A. Mission Description and Budget Item Justification Project 334 Common Software (CS): CS is the suite of systems through which the Army develops, integrates and tests common software products and/or components used for communication between Army Mission Command Systems and Joint and coalition Command and Control (C2) applications. The CS project provides state-of-the-art software technologies and functionality that is used by numerous Mission Command (MC) and joint systems to eliminate the need for service independent development and duplication of effort. The CS project also manages and performs technology demonstrations of emerging technologies for future use by Army C2 systems. The CS program is a cornerstone in the Army's COE modernization efforts. FY16 funding supports on-going development of common software solutions and the technical evaluation of previously developed software capabilities for integration into the computing environments of the Army Common Operating Environment (COE) architecture to include Cross Cutting Capabilities (CCC) that are also appropriate in Mounted and Mobile Computing environments. Efforts will include assessment of software maturity and readiness, development/modification of software as necessary to integrate with common computing environments, and validation. Common Software products include Data Dissemination Services (DDS) and C2 Infrastructure Virtual Machine as foundation for machine-to-machine (M2M) messaging CCC, Unit Task Organization, Universal Chat Bridge and Command and Control Registry hosted on Battle Command Common Services (BCCS) infrastructure.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Mission Command (MC) systems provide single common software enterprise infrastructure development in support of Army and Joint Services requirements. Description: Funding is provided for the following effort. FY 2015 Plans: Funding is provided for Common Software development efforts for infrastructure development, messaging standards integration, addressing development, remote configuration and management and widget services. FY 2016 Plans: Funding is provided for Common Software development efforts for infrastructure development, messaging standards integration, addressing development, remote configuration and management and widget services.									-	2.191	4.315	
Title: Joint and Coalition interoperability efforts.									-	1.146	2.450	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) 334 / Common Software	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Description: Provide software for interoperability of Joint and Coalition efforts. FY 2015 Plans: Provide software for interoperability of Joint and Coalition efforts including development, JITC Certification and Assessment, and exercise support. FY 2016 Plans: Will continue to provide software for interoperability of Joint and Coalition efforts including development, JITC Certification and Assessment, and exercise support.			
Title: Integration of previously developed and currently required mission command software services and common software solutions into the Army COE and Command Post Computing Environment. Description: Funding is provided for the following effort. FY 2014 Accomplishments: Integration of previously developed and currently required mission command software services and common software solutions into the Army COE and Command Post Computing Environment. FY 2015 Plans: Technical evaluation of previously developed software capabilities for integration with the computing environments of the Army Common Operating Environment (COE) architecture to include appropriate Mounted and Mobile Computing environments. Efforts will include assessment of software applicability to the core infrastructure, development/modification of software necessary to integrate, integration with common computing environments, and validation. FY 2016 Plans: Technical evaluation of previously developed software capabilities for integration with the computing environments of the Army Common Operating Environment (COE) architecture to include appropriate Mounted and Mobile Computing environments. Efforts will include assessment of software applicability to the core infrastructure, development/modification of software necessary to integrate, integration with common computing environments, and validation.		1.084	3.155
Title: Software Development - Battle Command Common Services (BCCS) Description: Battle Command Common Services (BCCS) provides an integrated Server hardware and locally hosted Enterprise Service Infrastructure for use in tactical Army command posts. C2 infrastructure and data services hosted on BCCS providing Joint and Multinational interoperability. FY 2016 Plans:		-	5.262

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) 334 / Common Software		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
BCCS software application and infrastructure development.				
Title: Test and Evaluation		-	0.288	1.562
Description: Test and Evaluation efforts include the planning and conduct of Test, Evaluation, and Integration events in support of CPCE development. This includes participation in Network Integration Exercises (NIEs), User Juries, Assessments, Risk Reduction Events (RREs), vulnerability testing, and Army Interoperability Certification (AIC) testing. Testing can consist of stand-alone capability testing in a lab/sandbox environment or full interoperability testing with multiple systems in an operational environments.				
FY 2015 Plans: Test and Evaluation required for Common Software. Software testing documentation and training and AIC.				
FY 2016 Plans: Test and Evaluation required for Common Software and BCCS. Software testing documentation and training and AIC.				
Title: Program Management		0.320	1.539	1.788
Description: Program management includes overall management of program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning meetings and IPTs.				
FY 2014 Accomplishments: Program Management - Includes Core, Matrix, and Contractor support.				
FY 2015 Plans: Program Management - Includes Core, Matrix, and Contractor support.				
FY 2016 Plans: Program Management - Includes Core, Matrix, and Contractor support.				
Accomplishments/Planned Programs Subtotals		1.404	8.319	18.440
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
Common Software also receives funding from the CPCE budget line (0604818A EJ4)				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / <i>Army Tactical Command & Control Hardware & Software</i>	Project (Number/Name) 334 / <i>Common Software</i>
<u>D. Acquisition Strategy</u> The overall acquisition goal of the CS project is to provide common products that are used horizontally across programs, preventing duplication of effort by Army and Joint programs and facilitating life cycle cost efficiencies. All software development efforts will be competed among Capability Maturity Model Integration (CMMI) certified developers. In accordance with the approved Net-enabled Mission Command Initial Capabilities Document (NeMC ICD), software capability will be developed in 2-year increments as capability sets designed to facilitate messaging, mediation and addressing for Army, Joint and Coalition Partners in synchronization with the maturity of the Common Operating Environment (COE) and Command Post Computing Environment (CP CE) architecture baselines. The product development funded under this R-Form is an integral part of the Mission Command systems, and a core communication component of the virtualized infrastructure and will be accomplished primarily under a Project Manager, Mission Command (PM MC) system of systems contract approach which consists of multiple prime contracts awarded from a single solicitation that will require each specific development task be competed among primes whenever possible. This strategy is designed to optimize opportunities for improved interoperability among the systems, to capture the benefits of competition, and to ensure the rapid integration of new capabilities into warfighter systems. This strategy is also designed to reduce the physical footprint, the logistics support requirements, and to increase operational efficiency by integration of additional system interoperability services which reduce duplication of effort and cost; and allows for development of communication standards across the DoD community. <u>E. Performance Metrics</u> N/A		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) 334 / Common Software					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Program Office Management	Various	PM Mission Command : Aberdeen, MD	9.288	0.320	Nov 2013	1.539	Nov 2014	1.788	Nov 2015	-		1.788	Continuing	Continuing	-
Subtotal			9.288	0.320		1.539		1.788		-		1.788	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Common Software Product Engineering/Software Development	C/CPFF	Various Contractors : Various Locations	0.000	-		-		4.315	Dec 2015	-		4.315	Continuing	Continuing	-
Mission Command/Army System Engineering & Integration	C/CPFF	Future Skies : Wall Township, NJ	5.547	1.084	Jan 2014	2.191	Mar 2015	-		-		-	-	8.822	6.679
Engineering & Integration for Joint and Coalition Interoperability	C/CPFF	Various Contractors : Various Locations	0.000	-		1.146	Mar 2015	2.450	Dec 2015	-		2.450	Continuing	Continuing	-
Evaluation, modification, validation & integration of developed SW	C/CPFF	Various Contractors : Various Locations	0.000	-		3.155	Mar 2015	3.063	Dec 2015	-		3.063	-	6.218	4.159
Battle Command Common Services Infrastructure and Application Development	C/CPFF	Various Contractors : APG, MD	0.000	-		-		5.262	Dec 2015	-		5.262	Continuing	Continuing	Continuing
Subtotal			5.547	1.084		6.492		15.090		-		15.090	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Developmental Test/ Operational Test	MIPR	Various : Various Locations	7.145	-		0.288	Mar 2015	1.562	Feb 2016	-		1.562	Continuing	Continuing	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) 334 / Common Software				

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			7.145	-		0.288		1.562		-		1.562	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.980	1.404	8.319	18.440	-	18.440	-	-	-

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity

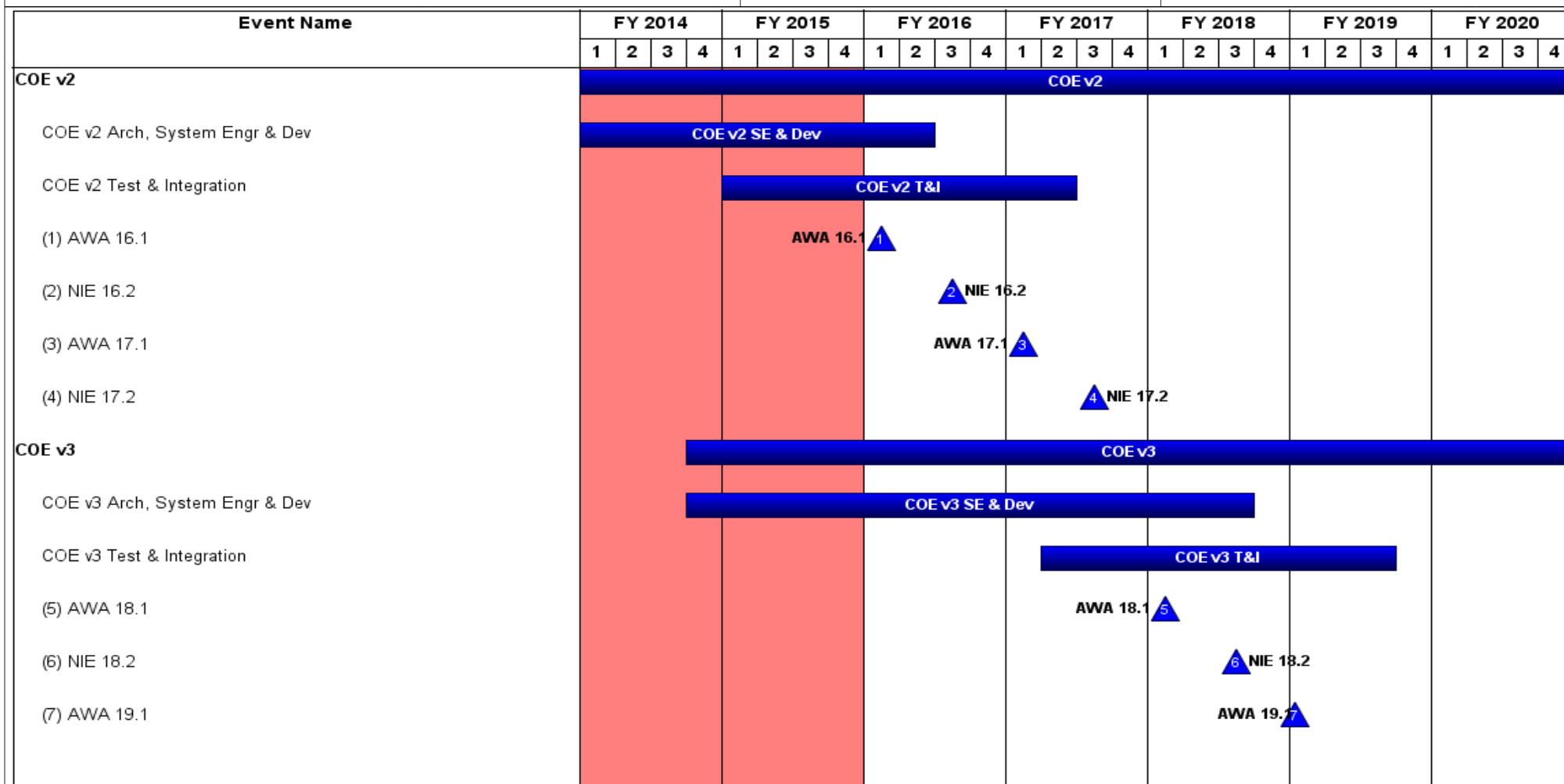
2040 / 5

R-1 Program Element (Number/Name)

PE 0604818A / Army Tactical Command & Control Hardware & Software

Project (Number/Name)

334 / Common Software



UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity										R-1 Program Element (Number/Name)								Project (Number/Name)										
2040 / 5										PE 0604818A / Army Tactical Command & Control Hardware & Software								334 / Common Software										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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) NIE 19.2																												
COE v4																												
COE v4 Arch, System Engr & Dev																												
COE v4 Test & Integration																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) 334 / Common Software	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
COE v2	2	2012	3	2022
COE v2 Arch, System Engr & Dev	2	2012	2	2016
COE v2 Test & Integration	1	2015	2	2017
AWA 16.1	1	2016	1	2016
NIE 16.2	3	2016	3	2016
AWA 17.1	1	2017	1	2017
NIE 17.2	3	2017	3	2017
COE v3	4	2014	3	2022
COE v3 Arch, System Engr & Dev	4	2014	3	2018
COE v3 Test & Integration	2	2017	3	2019
AWA 18.1	1	2018	1	2018
NIE 18.2	3	2018	3	2018
AWA 19.1	1	2019	1	2019
NIE 19.2	3	2019	3	2019
COE v4	2	2016	3	2022
COE v4 Arch, System Engr & Dev	2	2017	3	2021
COE v4 Test & Integration	2	2020	4	2021

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) C29 / Centralized Technical Support Facility (CTSF)			
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
C29: Centralized Technical Support Facility (CTSF)	-	4.615	7.874	3.203	-	3.203	-	-	-	-	-	15.692
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Project C29 - Centralized Technical Support Facility: The Central Technical Support Facility (CTSF) is the Army's premier test and certification facility for System of Systems interoperability. It is the Army's strategic facility responsible for conducting engineering support associated with test integration of Army Mission Command architectures into the Army Interoperability Certification (AIC) system of systems environment, performing AIC testing and conducting configuration management for all operational and tactical level applications (individual systems, System of Systems, and Families of Systems) prior to fielding. The CTSF provides validated test data to the Department of the Army and Joint agencies to accredit interoperability certifications. The distributed test environment of the CTSF is accomplished through the Federated Net-centric Sites (FaNS) construct. This FaNS construct addresses distributed integration development and testing using the core infrastructure of the CTSF to harness AMC, Army, and Joint expertise/resources. Through these federated resources, the CTSF executes interoperability development and certification testing of the Warfighter mission areas, to include Network Evaluation spinouts, as they digitize and become part of the Army's LandWarNet.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Army Interoperability Certification (AIC) Testing									2.638	6.196	2.111	
Description: Conduct Army Interoperability Certification testing/planning/data collection/ data analysis/reporting, interoperability baseline testing, simulation/ stimulation verification/validation and distributed testing. Manage the set-up, configuration, integration, and operations and maintenance of the LandWarNet systems within the test floor environment, as the CIO/G-6's Test Agent for Program Managers of LandWarNet systems that need to deliver software updates for fielding to the Warfighter. Report the results of Army Interoperability Certification Tests to the CIO/G-6, PM, and TRADOC communities to support updates to the G-3/5/7 managed baseline.												
FY 2014 Accomplishments: Executed integration support/testing/evaluation for SWB2, CS11-12, and COE v1.0 through test planning, test case development, information assurance software/compliance scans, and test tool verification. Began work on COE v 1.0 and beyond Army Transition Strategy focusing on technical integration within the Computing Environment (CE) and Control Point (CP) construct, defining control point specifications between CPs, and testing methodology within CEs and between CEs as part of the Army Transition to COE strategy.												
FY 2015 Plans: Continue SWB2, CS11-12, COE 1.0 and Beyond test planning, test case development, test floor architecture set-up to include information assurance software/compliance, test tools, and conduct COE 1.0 and Beyond testing/evaluation and certification;												

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) C29 / Centralized Technical Support Facility (CTSF)	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
begin development of distributed Control Point test process and test architectures with Computing Environment Leads, Program Executive Offices and Program Managers. AIC testing and data collection will be on a bi-annual basis beginning FY15.			
FY 2016 Plans: Continue SWB2, CS11-12, COE 1.0 and Beyond test planning, test case development, test floor architecture set-up to include information assurance software/compliance, test tools, and conduct COE 1.0 and Beyond testing/evaluation and certification, incrementally implementing and utilizing distributed Control Point test processes and test architectures. Prepare to conduct initial AIC testing and certification of COE 2.0, projected during FY16; begin bi-monthly widget testing with COE 2.0 AIC.			
Title: Engineering Services Description: Provide network engineering support to establish and maintain tactical architectures on the CTSF test floors and to deploying/fielded units at training centers around the world (NIE, JRTC, NTC, JMRC). System engineering support provides hardware virtualization, advanced Host Based Security System (HBSS) support, system validation and integration support to numerous PMs on the integration and risk reduction labs, and assists Army programs with interoperability assessments and AIC rehearsal. FY 2014 Accomplishments: Continued AIC Integration and Testing support. Conducted Network Integration checkout before each AIC to ensure systems and Network were ready for test. Supported PMs for COE V1.0 integration. Supported backward compatibility testing between SWB2, CS11-12 and COE V1.0. Identified and incorporated software tools to monitor performance and assisted in issue resolution. Decreased scope and size of engineering staff to implement the HQDA directed guidance to provide systems engineering support services only directed at test/certification research, tools and instrumentation to speed the testing of LandWarNet/Mission Command systems. Provided PMs with a Virtualization Suite and assisted in virtualizing software (SW). Supported deploying/fielded units at training centers around the world (NIE, JRTC, NTC, JMRC). FY 2015 Plans: Support AIC Integration and Testing. Continue support to PMs for COE integration. Support to backward compatibility testing between SWB2, CS11-12/COE V1.0/COE V2.0. Identify and incorporate software tools to monitor performance and assist in issue resolution. Integrate and implement HBSS technology. Assist integration and test architectures to include Program of Record (POR) and non-POR radio communications devices to provide PMs and Materiel Developers testing in realistic environments. Provide CTSF network and systems engineering for validation of end-to-end sensor and platform communications and interoperability. Provide software patch validation; network support for integration and test floors; network support to fielded units upon request; and systems engineering and analysis support to System of Systems Integration activities. Provide PMs with a Virtualization Suite and assist in virtualizing SW. Assist Assistant Secretary of the Army(Acquisition, Logistics, Technology)		0.742	0.481
		0.145	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software		Project (Number/Name) C29 / Centralized Technical Support Facility (CTSF)	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
(ASA(ALT)) in developing and refining Control Point Testing for COE and distributed testing between the Computer Environments (CEs). Assist ASA(ALT) in defining the COE architectures and services. FY 2016 Plans: Support AIC Integration and Testing. Continue support to PMs for COE integration. Support to backward compatibility testing between SWB2, CS11-12/COE V1.0/COE V2.0/COE V3.0. Identify and incorporate software tools to monitor performance and assist in issue resolution. Integrate and implement HBSS technology. Assist integration and test architectures to include Program of Record (POR) and non-POR radio communications devices to provide PMs and Materiel Developers testing in realistic environments. Provide CTSF network and systems engineering for validation of end-to-end sensor and platform communications and interoperability. Provide software patch validation; network support for integration and test floors; network support to fielded units upon request; and systems engineering and analysis support to system of systems integration activities. Provide PMs with a Virtualization Suite and assist in virtualizing software. Plan and conduct engineering evaluations for AIC testing and data collection in the Network Integration Evaluation (NIE)/Capability Integration Evaluation (CIE) to leverage the operational environment and NIE/CIE resources. Continue development and refinement of Control Point and distributed testing.					
Title: Configuration Management Description: Establish and maintain the configuration baseline of the Army LandWarNet Mission Command Baseline (ALWNMCB) for Lifecycle Software Management (LCSM). CM facilitates orderly management of product configuration information and product change management (ChM) to enable capability revisions, improve reliability and maintainability, extend life, reduce cost, and provide support to Materiel Developers (MATDEV), Program Manager (PM) and System Owner (SO) for a visual and informational retrievable authoritative database to assist with determination of risk reduction and liability, and/or to correct defects. Conduct Physical Configuration Audits (PCAs) at the start-of-exercise (StartEx) and end-of-exercise (EndEx) of testing; probe a representative hard drive of each type for each Warfighter Area and a representative sample of the windows systems before and after testing. Provide memorandum of record that authenticates the integrity of the software based on a comparison of before and after probes. FY 2014 Accomplishments: Verified CS11-12 for Bi-Annals and COE v1.0 software configuration prior to bi-annual test events, controlled and managed configuration and architecture during test to ensure validity with certification event, and maintain baselines as Title 40 manager for HQ/DA CIO/G6 and G3/5/7; disseminated software to deployed/deploying units. Sustained Configuration Management Tracking Tool Version 3 (CMTSIII) to incorporate CMTSIII Director Report and Incident Reporting of CTSF Certification of Systems Under Test. Established support to AGILE Process with access to CMTSIII performing audits in support of activities performed at the NIE events. FY 2015 Plans:			0.173	0.176	0.139

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) C29 / Centralized Technical Support Facility (CTSF)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Validate and verify software configuration prior to test, control configuration during test, and manage and maintain the Army Interoperable Certified Fielded Baseline (AICFB) on behalf of HQ/DA CIO/G6 and the Army LandWarNet/Mission Command Baselines (ALWNMCB) for HQ/DA G3/5/7; disseminate software and patches to deployed/deploying units. Sustain Configuration Management Tracking Tool Version 3 (CMTSIII) to incorporate CTSF Baseline tracking for Army Interoperability Certification of Systems Under Test. Upgrade CTSF Personnel certification to the next level. Sustain support to AGILE Process with access to CMTSIII performing audits in support of activities performed at the NIE. FY 2016 Plans: Bring online the Universal Audit Tool (UAT) to assist with the automation of audit management. Incorporate the CM Virtual Repository into the main streamline of CM normal functions and workload process. Add T&E MGMT Tools Suite, Engineering Services, Information Assurance and Resource Management modules to CMTSIII. CMTSIII updates to Shipping, Media, Hard Drive and MFE Modules completed. Continue working with Federation of Net-Centric Sites, NATO Communications and Information Agency, and DoD Configuration Managers on processes; manage expectations between processes and sites.				
Title: Management Operations/Program Office Description: Provide management operations consisting of planning, programming and executing funds, personnel, and contracts supporting AIC testing processes; and identifying reimbursable tests and collecting/allocating appropriate funds. FY 2014 Accomplishments: Programmed and executed funds/manpower/contracting requirements; tracked testing schedule, prepared/coordinated/tracked reimbursements for tests (COE V1.0 I2E and AIC baseline testing; CS 11-12 Bi-Annual testing; Software Block 2 Bi-Annual testing; Joint systems tests; and future systems test events). Provided field support coordination for unit training and exercises. Maintained facility and test infrastructure. FY 2015 Plans: Program and execute funds/manpower/contracting requirements; track testing schedule, prepare/coordinate/track reimbursements for tests (e.g. COE V1.0 and Beyond tests, CS 11-12 Bi-Annual testing, Joint, Coalition, and future systems test events). Provide field support coordination for unit training and exercises. Maintain facility and test infrastructure. FY 2016 Plans: Program and execute funds/manpower/contracting requirements; track testing schedule, prepare/coordinate/track reimbursements for tests (e.g. COE V1.0 and Beyond tests, CS 11-12 Bi-Annual testing, Joint, Coalition, and future systems test events). Provide field support coordination for unit training and exercises. Maintain facility and test infrastructure.		1.062	1.021	0.808
Accomplishments/Planned Programs Subtotals		4.615	7.874	3.203

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / <i>Army Tactical Command & Control Hardware & Software</i>	Project (Number/Name) C29 / <i>Centralized Technical Support Facility (CTSF)</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy Execute system of systems interoperability testing and certification through the use of Government and Systems Engineering and Technical Analysis (SETA) contract personnel experienced in product development and interoperability testing. Testing and certification occurs in a cyclical fashion, with an expectation of an annual Software Block/Capability Set test followed with cyclical test events (Bi-Annual Tests) to ensure integrity of software baselines to the Warfighter. Engineering Services provides strategic integration of software into a system of systems/family of systems environment to support interoperability testing. Establish and maintain Configuration Management and version control of the Army's Interoperable Battle Command LandWarNet Baseline. Distributed testing capability uses local assets and leverages other federated test facilities to create synergy and realize efficiencies, to include system of system test efforts, where possible at 2/1 AD/WSMR (NIE).		
E. Performance Metrics N/A		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software						Project (Number/Name) C29 / Centralized Technical Support Facility (CTSF)			
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
MITRE Corp	FFRDC	Engineering Services : Fort Hood, TX	16.304	0.569	Oct 2013	0.305	Oct 2014	-		-		-	-	17.178	-
In-House	Allot	Engineering Services : Fort Hood, TX	2.199	0.173	Oct 2013	0.176		-		-		-	-	2.548	-
Subtotal			18.503	0.742		0.481		-		-		-	-	19.726	-
Remarks CECOM R2 3G contract effort terminated at end FY13. No further effort planned; no follow-on contract awards. MITRE support will terminate at end FY14; funds will apply to "Test and Eval" CECOM R2 3G effort. Effective mid-FY14, In-House effort/function transferred from "Product Development" to "Test and Eval"															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
CECOM Matrix	MIPR	Program and Budget Analysis Support : Fort Hood, TX/ Aberdeen Proving Grounds, MD	3.484	0.070	Oct 2013	0.180	Oct 2014	0.202	Oct 2015	-		0.202	-	3.936	-
In-House Support	Allot	Management Operations, Logistics Support : Fort Hood, TX	7.666	0.902	Oct 2013	0.814	Oct 2014	0.546	Oct 2015	-		0.546	-	9.928	-
Supplies	C/UCA	Management Operations, Logistics Support : Fort Hood, TX	1.132	0.090	Oct 2013	0.027		0.060		-		0.060	-	1.309	-
Subtotal			12.282	1.062		1.021		0.808		-		0.808	-	15.173	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) C29 / Centralized Technical Support Facility (CTSF)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
CECOM R2 3G	C/CPFF	Test, Configuration Management : Fort Hood, TX	5.829	0.715	Sep 2013	2.703	Sep 2014	0.150	Sep 2016	-		0.150	-	9.397	-
CECOM S3	C/CPFF	Facilities, Maintenance, Security : Fort Hood, TX	5.439	0.234	Sep 2013	1.200	Mar 2015	0.150	Mar 2016	-		0.150	-	7.023	-
Instrumentation	C/UCA	Test Equipment Infrastructure : Fort Hood, TX	1.583	0.004	Oct 2013	0.301	Oct 2014	0.104	Oct 2015	-		0.104	-	1.992	-
EPG Matrix	MIPR	Test : Fort Hood, TX	3.675	1.178	Oct 2013	1.175	Oct 2014	1.116	Oct 2015	-		1.116	-	7.144	-
ISSA	MIPR	Test : Fort Hood, TX	4.444	0.010	Oct 2013	0.311		0.180		-		0.180	-	4.945	-
In-House Support	Allot	Test : Fort Hood,TX	1.397	0.670	Oct 2013	0.682	Oct 2014	0.695	Oct 2015	-		0.695	-	3.444	-
Subtotal			22.367	2.811		6.372		2.395		-		2.395	-	33.945	-
Remarks															
CECOM R2 contract will provide Test and Configuration Management functions. CECOM S3 contract will provide Site Support/Facilities, Maintenance, and Security functions. R2 & S3 contracts partially funded in FY16. CTSF activities not covered by RDT&E Direct funding will be reimbursed from customers in fee for service. Reimbursable funding model remains to be finalized.															
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			53.152	4.615		7.874		3.203		-		3.203	-	68.844	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																	Date: February 2015																																
Appropriation/Budget Activity										R-1 Program Element (Number/Name)								Project (Number/Name)																															
2040 / 5										PE 0604818A / Army Tactical Command & Control Hardware & Software								C29 / Centralized Technical Support Facility (CTSF)																															
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020															
										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												
SWB II Bi-Annual 2-16										16				17																																			
2-17																																																	
2-18														18																																			
2-19																		19																															
2-20																		20																															
2-21																						21																											
2-22																						22																											
2-23																										23																							
2-24																														24																			
2-25																														25																			
2-26																																		26															
2-27																																						27											
2-28																																										28							

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																	Date: February 2015											
Appropriation/Budget Activity										R-1 Program Element (Number/Name)								Project (Number/Name)										
2040 / 5										PE 0604818A / Army Tactical Command & Control Hardware & Software								C29 / Centralized Technical Support Facility (CTSF)										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
CS11-12 Bi-Annual 11-9	9																											
11-10		10																										
11-11			11																									
11-12				12																								
11-13					13																							
11-14						14																						
11-15							15																					
11-16								16																				
11-17									17																			
11-18										18																		
11-19											19																	
11-20												20																
11-21														21														

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																	Date: February 2015																				
Appropriation/Budget Activity										R-1 Program Element (Number/Name)								Project (Number/Name)																			
2040 / 5										PE 0604818A / Army Tactical Command & Control Hardware & Software								C29 / Centralized Technical Support Facility (CTSF)																			
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										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
COE 1.0 AIC										AIC				F-o																							
AIC 1.0 Follow-on																																					
Bi-Annual 1.1																																					
1.2																																					
1.3																																					
1.4																																					
1.5																																					
1.6																																					
1.7																																					
1.8																																					
1.9																																					
COE 2.0 I2E										I2E				AIC																							
COE 2.0 AIC																																					

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																													
Appropriation/Budget Activity										R-1 Program Element (Number/Name)								Project (Number/Name)																											
2040 / 5										PE 0604818A / Army Tactical Command & Control Hardware & Software								C29 / Centralized Technical Support Facility (CTSF)																											
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020											
										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								
Bi-Annual 2.1																		1																											
2.2																						2																							
2.3																						3																							
2.4																										4																			
2.5																										5																			
2.6																														6															
2.7																														7															
2.8																																		8											
2.9																																						9							
COE 3.0 I2E Pilot (Control Point Testing)																						I2E																							
COE 3.0 AIC (Control Point testing)																										AIC																			
COE 3.0 AIC Follow-on																														F-o															
Bi-Annual 3.1																																		3.1											

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software								Project (Number/Name) C29 / Centralized Technical Support Facility (CTSF)																			
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										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
3.2																														3.2							
3.3																														3.3							
CM										Configuration Management (continuous)																											
ES										Test Integration (continuous)																											

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) C29 / Centralized Technical Support Facility (CTSF)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SWB II Bi-Annual 2-16	2	2014	2	2014
2-17	1	2015	1	2015
2-18	3	2015	3	2015
2-19	1	2016	1	2016
2-20	3	2016	3	2016
2-21	1	2017	1	2017
2-22	3	2017	3	2017
2-23	1	2018	1	2018
2-24	3	2018	3	2018
2-25	1	2019	1	2019
2-26	3	2019	3	2019
2-27	1	2020	1	2020
2-28	3	2020	3	2020
CS11-12 Bi-Annual 11-9	1	2014	1	2014
11-10	2	2014	3	2014
11-11	4	2014	4	2014
11-12	1	2015	2	2015
11-13	4	2015	4	2015
11-14	1	2016	2	2016
11-15	4	2016	4	2016
11-16	1	2017	2	2017
11-17	4	2017	4	2017

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software		Project (Number/Name) C29 / Centralized Technical Support Facility (CTSF)	
	Start		End	
Events	Quarter	Year	Quarter	Year
11-18	1	2018	2	2018
11-19	4	2018	4	2018
11-20	1	2019	2	2019
11-21	4	2019	4	2019
COE 1.0 AIC	2	2014	3	2014
AIC 1.0 Follow-on	2	2015	3	2015
Bi-Annual 1.1	3	2015	4	2015
1.2	1	2016	1	2016
1.3	3	2016	4	2016
1.4	1	2017	1	2017
1.5	3	2017	4	2017
1.6	1	2018	1	2018
1.7	3	2018	4	2018
1.8	1	2019	1	2019
1.9	3	2019	4	2019
COE 2.0 I2E	1	2016	1	2016
COE 2.0 AIC	2	2016	2	2016
Bi-Annual 2.1	4	2016	4	2016
2.2	2	2017	2	2017
2.3	4	2017	4	2017
2.4	2	2018	2	2018
2.5	4	2018	4	2018
2.6	2	2019	2	2019
2.7	4	2019	4	2019
2.8	2	2020	2	2020

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software		Project (Number/Name) C29 / Centralized Technical Support Facility (CTSF)	
	Start		End	
Events	Quarter	Year	Quarter	Year
2.9	4	2020	4	2020
COE 3.0 I2E Pilot (Control Point Testing)	3	2017	4	2017
COE 3.0 AIC (Control Point testing)	1	2018	2	2018
COE 3.0 AIC Follow-on	1	2019	1	2019
Bi-Annual 3.1	3	2019	3	2019
3.2	1	2020	1	2020
3.3	3	2020	3	2020
CM	2	2007	4	2020
ES	2	2007	4	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) C34 / Army Tac C2 Sys Eng				
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	
C34: Army Tac C2 Sys Eng	-	11.264	8.978	9.046	-	9.046	9.194	9.286	9.331	9.431	Continuing	Continuing	
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-			
Note Not applicable for this item.													
A. Mission Description and Budget Item Justification Project C34, Army Tactical Command and Control Systems Engineering: This project funds the PEO Command, Control, Communications-Tactical (PEO C3T) Technical Management Division (TMD) systems engineering and integration, experimentation, acquisition management, testing, fielding and sustainment support to ensure interoperability and affordability among the PEO C3T suite for Army Capability Sets (CS). The TMD focuses on System-of-Systems (SoS) Engineering and Integration for the C3T network with increased emphasis on immediate Warfighter needs as well as leveraging emerging technologies, through the G3 LandWarNet Capability Set Development and Integration. Fiscal Year 2016 will focus on the continued development, implementation and integration of the Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, and Reconnaissance (C5ISR) network architectures. This will include development of a technology enhancement roadmap for SoS capability evolution across the PEO C3T portfolio; network integration support and design products for CS validation at Network Integration Evaluations (NIE); integration of tactical Networked capabilities for all CS, initiative fieldings, and integration events; integration of tactical information assurance solutions and security measures for consistent cyber protection; and execution of SoS developmental testing across the PEO portfolio in support of capability set fieldings.													
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016		
Title: Continue Army Tactical Battle Command and Network Synchronization and Integration Support									0.172	0.138	0.139		
Description: .													
FY 2014 Accomplishments: Continue the support of current force and the development of future force C5ISR across the tactical network to ensure all Assistant Secretary of the Army (Acquisition, Logistics & Technology) (ASA(ALT)) programs are synchronized and redundancies and overlapping capabilities are reduced across the network and in synchronization with Common Operating Environment.													
FY 2015 Plans: Continue the support of current force and the development of future force C5ISR across the tactical network to ensure all Assistant Secretary of the Army (Acquisition, Logistics & Technology) (ASA(ALT)) programs are synchronized and redundancies and overlapping capabilities are reduced across the network and in synchronization with Common Operating Environment.													
FY 2016 Plans:													

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) C34 / Army Tac C2 Sys Eng		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continue the support of current force and the development of future force C5ISR across the tactical network to ensure all Assistant Secretary of the Army (Acquisition, Logistics & Technology) (ASA(ALT)) programs are synchronized and redundancies and overlapping capabilities are reduced across the network and in synchronization with Common Operating Environment.					
Title: Continue Developmental Testing & Integration Testing between Programs of Record (PORs) and platforms / Command Posts (CPs) to execute System-of-Systems (SoS) and Interoperability Description: . FY 2014 Accomplishments: Continue to conduct integration testing and systems engineering for C3T non-program of record and program of record systems, products, technical insertions, and systems under evaluation to ensure integration of capabilities across the network. Provide training and continued development of current engineers. FY 2015 Plans: Continue to conduct integration testing and systems engineering for C3T non-program of record and program of record systems, products, technical insertions, and systems under evaluation to ensure integration of capabilities across the network. Provide training and continued development of current engineers. FY 2016 Plans: Continue to conduct integration testing and systems engineering for C3T non-program of record and program of record systems, products, technical insertions, and systems under evaluation to ensure integration of capabilities across the network. Provide training and continued development of current engineers.			1.686	1.344	1.354
Title: Continue Tactical Network Engineering Description: . FY 2014 Accomplishments: Develop effective engineering strategies to integrate tactical applications for use across the C3T enterprise network. Continue to perform network planning and integration activities across all cross-domain system-of-systems future capabilities and technologies FY 2015 Plans: Develop effective engineering strategies to integrate tactical applications for use across the C3T enterprise network. Continue to perform network planning and integration activities across all cross-domain system-of-systems future capabilities and technologies. FY 2016 Plans:			0.967	0.770	0.776

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) C34 / Army Tac C2 Sys Eng		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Develop effective engineering strategies to integrate tactical applications for use across the C3T enterprise network. Continue to perform network planning and integration activities across all cross-domain system-of-systems future capabilities and technologies.					
Title: Conduct and Support System Interoperability Engineering and Development of System-of-Systems (SoS) Architectural Products Description: . FY 2014 Accomplishments: Within the PEO C3T portfolio, continue to assess Emerging Technologies, identify critical integrated test points, conduct developmental testing at integration points, develop architectural data process/tool kits, and facilitate the transition of Network capabilities to the warfighter. FY 2015 Plans: Within the PEO C3T portfolio, continue to assess Emerging Technologies, identify critical integrated test points, conduct developmental testing at integration points, develop architectural data process/tool kits, and facilitate the transition of Network capabilities to the warfighter. FY 2016 Plans: Within the PEO C3T portfolio, continue to assess Emerging Technologies, identify critical integrated test points, conduct developmental testing at integration points, develop architectural data process/tool kits, and facilitate the transition of Network capabilities to the warfighter.			2.171	1.730	1.744
Title: Continue Development and Implementation of Tactical Information Assurance (IA) Description: . FY 2014 Accomplishments: Continue to support CIO/G6 and CYBERCOM guidance for execution of Information Assurance policies and procedures at the tactical level. Continue to plan and design security measures and IA requirements across the tactical network for future capabilities. FY 2015 Plans: Implement CIO/G6 and CYBERCOM guidance for execution of Information Assurance policies and procedures at the tactical level. Continue to document the current tactical IA network architecture with the goal of developing recommendations to eliminate			0.328	0.261	0.263

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) C34 / Army Tac C2 Sys Eng		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
inconsistencies/duplications, increasing the security posture, decreasing complexity of operations, and decreasing costs. Continue to plan and design security measures and IA requirements across the tactical network for future capabilities. FY 2016 Plans: Implement CIO/G6 and CYBERCOM guidance for execution of Information Assurance policies and procedures at the tactical level. Continue to document the current tactical IA network architecture with the goal of developing recommendations to eliminate inconsistencies/duplications, increasing the security posture, decreasing complexity of operations, and decreasing costs. Continue to plan and design security measures and IA requirements across the tactical network for future capabilities.				
Title: Continue System of Systems Development Description: . FY 2014 Accomplishments: Continue to effectively manage overall System-of-Systems Engineering, Enterprise, and Integration efforts for the PEO C3T portfolio of technology and capability enhancement programs. FY 2015 Plans: Continue to effectively manage overall System-of-Systems Engineering, Enterprise, and Integration efforts for the PEO C3T portfolio of technology and capability enhancement programs. FY 2016 Plans: Continue to effectively manage overall System-of-Systems Engineering, Enterprise, and Integration efforts for the PEO C3T portfolio of technology and capability enhancement programs.		3.864	3.080	3.103
Title: System of Systems (SoS) Engineering and Integration Evolution of the Network Description: . FY 2014 Accomplishments: Continue to develop streamlined processes to support ASA(ALT) SoSE&I and implement VE and Lean Six Sigma initiatives across all PEO C3T capabilities to include the Joint Coalition partners. Also continue to implement cross PEO System of Systems Engineering and Integration processes to ensure successful development Engineering and Testing. FY 2015 Plans:		2.076	1.655	1.667

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) C34 / Army Tac C2 Sys Eng	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Continue to develop streamlined processes to support ASA(ALT) SoSE&I and implement Value Engineering (VE) and Lean Six Sigma initiatives across all PEO C3T capabilities to include the Joint Coalition partners. Also continue to implement cross PEO System of Systems Engineering and Integration processes to ensure successful development Engineering and Testing.			
FY 2016 Plans: Continue to develop streamlined processes to support ASA(ALT) SoSE&I and implement Value Engineering (VE) and Lean Six Sigma initiatives across all PEO C3T capabilities to include the Joint Coalition partners. Also continue to implement cross PEO System of Systems Engineering and Integration processes to ensure successful development Engineering and Testing.			
Accomplishments/Planned Programs Subtotals		11.264	8.978
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks Not applicable for this item.			
D. Acquisition Strategy This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, interoperability, support to fielding and sustainment. It will focus on System-of-Systems (SoS) Systems Engineering and Integration for the tactical network with increased emphasis on immediate Warfighter needs as well as leveraging emerging technologies, through the G3 LandWarNet Capability Set Development and Integration. The Technical Management Division (TMD) will ensure that the Program Executive Office Command, Control, Communications-Tactical (PEO C3T) capability portfolio is effectively SoS engineered and integrated to meet the tactical Warfighter's evolving mission needs.			
E. Performance Metrics N/A			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software						Project (Number/Name) C34 / Army Tac C2 Sys Eng			
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Emerging Technologies	SS/FP	CACI : Aberdeen Proving Ground, MD	21.092	-		-		-		-		-	Continuing	Continuing	Continuing
Emerging Technologies	SS/FP	Southwest Research Installation : Aberdeen Proving Ground, MD	0.175	-		-		-		-		-	-	0.175	-
System Of System Engineering and Integration, Current and Strategic Initiatives	C/T&M	CSC Aberdeen Proving Ground /Fort Hood, TX : APG	57.690	-		-		-		-		-	Continuing	Continuing	Continuing
System of System Engineering & Integration, Current & Strategic Initiative, Architecture Integration	C/T&M	TBD : tbd	0.000	3.412		2.662		2.598		-		2.598	Continuing	Continuing	Continuing
Architecture Integration	C/T&M	CSC : various	9.005	-		-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering Support	SS/FP	LOCKHEED MARTIN : Eatontown, NJ	7.799	-		-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering Support	C/CPFF	Northrop Grumman : Arlington, VA	5.282	-		-		-		-		-	-	5.282	-
Systems Engineering Support	C/CPFF	TBD : tbd	0.000	1.786		1.393		-		-		-	Continuing	Continuing	Continuing
System of System Architectures, Engineering, and Integration	SS/FP	MITRE : Aberdeen Proving Ground, MD/ Eatontown, NJ	80.727	3.396		2.650		4.340		-		4.340	Continuing	Continuing	Continuing
Tactical Network Initialization	SS/FP	Future Skys Inc. : Neptune, NJ	0.600	-		-		-		-		-	Continuing	Continuing	Continuing
System of System Engineering and Integration	C/T&M	CSC : Huntsville, AL	0.000	-		-		0.172		-		0.172	-	0.172	-
System of System Engineering and Integration	C/T&M	Viatech : NJ	0.000	-		-		0.372		-		0.372	-	0.372	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software					Project (Number/Name) C34 / Army Tac C2 Sys Eng				
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			182.370	8.594		6.705		7.482		-		7.482	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
IN-HOUSE SUPPORT	Various	PEO C3T : APG, MD	27.400	1.287		1.801		1.125		-		1.125	Continuing	Continuing	Continuing
MATRIX	Various	Various : Aberdeen Proving Ground, MD	10.863	1.027		0.472		0.439		-		0.439	Continuing	Continuing	Continuing
OTHER GOVERNMENT SUPPORT	Various	Various : Various	7.021	0.356		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			45.284	2.670		2.273		1.564		-		1.564	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			227.654	11.264		8.978		9.046		-		9.046	-	-	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army	Date: February 2015
--	----------------------------

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) C34 / Army Tac C2 Sys Eng
--	---	---

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Continue Army Battle Command (ABCS)/Capability Sets (CS) Testing a																												
Capability Set 13 Fielding																												
Network Load Exercise 14.1																												
Communications Exercise 14.1																												
Network Pilot 14.1																												
Network Load Exercise 14.2																												
Communications Exercise 14.2																												
Network Pilot 14.2																												
Capability Set 14 Fielding																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) C34 / Army Tac C2 Sys Eng	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Continue Army Battle Command (ABCS)/Capability Sets (CS) Testing and Eval	1	2008	4	2019
Capability Set 13 Fielding	2	2013	2	2014
Network Load Exercise 14.1	1	2014	1	2014
Communications Exercise 14.1	1	2014	1	2014
Network Pilot 14.1	1	2014	1	2014
Network Load Exercise 14.2	2	2014	2	2014
Communications Exercise 14.2	3	2014	3	2014
Network Pilot 14.2	3	2014	3	2014
Capability Set 14 Fielding	1	2014	4	2014

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) EJ4 / COMMAND POST COMPUTING ENVIRONMENT (CPCE)			
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
EJ4: COMMAND POST COMPUTING ENVIRONMENT (CPCE)	-	-	-	70.483	-	70.483	83.373	102.233	72.468	4.963	79.058	412.578
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This project is not a new start program. Command Post Computing Environment (CPCE), Proj/PE 604818.EJ4, line starting in FY16 reflects realignment of COE infrastructure development and application migration onto the new common core foundation which began under the Tactical Mission Command (TMC) established program of record (PE/Proj 203740.484).

A. Mission Description and Budget Item Justification

The Command Post Computing Environment (CPCE), one of the six computing environments under the Common Operating Environment (COE) initiative, provides a Common Infrastructure and Common Services for Warfighter capabilities. The resulting operating environment will allow twenty-six (26) products/systems to leverage the CPCE's Common Core Software Baseline and Hardware Configuration, simplifying future development efforts and enhancing interoperability and data sharing. The CPCE enables Command and Control (C2) capability development at tactical echelons that span from the company to all Army Service Component Commands (ASCC) and thus, is the most employed and critical computing environment developed to support the command posts and combat operations.

Operationally, Army formations encounter a variety of complex environments where boundaries between tactical and strategic levels of war have merged. This requires a computing environment capability that will simplify operations, enhance the Common Operational Picture (COP), provide integrated applications and data, enhance communications in disconnected, intermittent, and limited bandwidth (DIL) environments, and automate software updates. Additional CPCE goals include: Multi-Echelon reach (ASCC thru Battalion), Cross Cutting Capabilities (CCCs), C2 on the Move (C2OTM), Strategic and Tactical Operational and intelligence data sharing, Unified Data on a Common Map, and Sharing Data to Other Computing Environments (Mobile Handheld, Mounted, Sensors, etc.).

Acquisition Goals of the CPCE include: Acquisition Agility, Open Architectures, Reduced Life Cycle Costs, and a Cyber-Hardened Foundation for applications and services.

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

	FY 2014	FY 2015	FY 2016
Title: SW Dev - Infrastructure (Collaboration)	-	-	17.040
Description: Collaboration is the ability to share and communicate information for the purpose of achieving common and shared understanding of the military situation for all participants across all warfighting functions and operational nodes. Includes efforts on chat, voice, file sharing, map boarding, shared workspace, video & disconnected intermittent latent environment support			
FY 2016 Plans:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) EJ4 / COMMAND POST COMPUTING ENVIRONMENT (CPCE)	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Collaboration			FY 2016
Title: SW Dev - Infrastructure (Display/Share Relevant Tactical Information) Description: Common graphical user interface, shared data and tools such as decision making, planning. Common widgets and style guides to include common map and common query of data. FY 2016 Plans: Display/Share Relevant Tactical Information		-	1.830
Title: SW Dev - Infrastructure (C2 on the Move) Description: Provides key leaders and staffs the ability to maintain situational understanding and access to information when transitioning between operational nodes (dismounted, mounted, and within a command post) FY 2016 Plans: Command and Control on the Move		-	0.470
Title: SW Dev - Infrastructure (Application Marketplace) Description: Provide users the ability to discover and access variety of CP CE web applications available without having all applications predefined or preinstalled on end user device. Provide users with applications that utilize common software functions (ie security) FY 2016 Plans: Application Marketplace		-	1.570
Title: SW Dev - Infrastructure (Sustainment Essential Capabilities) Description: Provides implementation of Army Sustainment MC capabilities as specific tools for supply, logistics, maintenance, medical, personnel, in-transit visibility, and operational status functions. These tools further provide users the ability to integrate logistical plans and execution information/data with other battle staff members to coordinate and synchronize operations and to collaborate on essential information on the COP with the Commander in support of decision-making. All are compliant with the CPCE architecture, including use of common/core infrastructure (NETOPS, QoS, Security, etc) and support NIPR, SIPR, and JIIM security domains. FY 2016 Plans: Sustainment Essential Capabilities		-	2.420
Title: SW Dev - Infrastructure (Training Support)		-	0.630

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) EJ4 / COMMAND POST COMPUTING ENVIRONMENT (CPCE)		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Description: Create a training environment for the soldiers; provide the soldier the same look and feel as applications/widgets that are used to perform their mission. FY 2016 Plans: Training Support					
Title: SW Dev - Infrastructure (JIIM Interoperability) Description: Provide the capability and interoperability services for improved exchange of information, collaboration, and full interaction with Joint, Interagency, Intergovernmental, and Multinational stakeholders comprising Unified Action Partners. PM Mission Command provides the Army implementation and fielding of Joint C2 architecture (the evolution of the GCCS family of systems) FY 2016 Plans: JIIM Interoperability			-	-	11.250
Title: SW Dev - Infrastructure (Execute Running Estimates) Description: Provides implementation of MC Planning Services and tools that support all Commanders and their staffs executing the MDMP for all mission types. Includes onthe ability to generate and save plans as data so plans can be intelligently compared to current operations as plans are executed. When the current situation differs from the plan, alerts and recommendations for plan changes are provided to the Commander. Includes integration of simulation tools to support automated wargaming. FY 2016 Plans: Execute Running Estimates			-	-	0.830
Title: SW Dev - Infrastructure (Unified Data Synch) Description: Provide users the capability to search for and access information that spans multiple warfighting functions when available from a consolidated set of data stores that make information available at the point of need. Data created in garrison made available en route to and while executing military operations. FY 2016 Plans: Unified Data Synch			-	-	3.300
Title: SW Dev - Infrastructure (Create/Communicate/Rehearse Orders) Description: Provides implementation of tools to support consolidation of products and information produced during the planning process and then supports automatic generation of orders with ability to disseminate those orders across the command.			-	-	0.940

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software		Project (Number/Name) EJ4 / COMMAND POST COMPUTING ENVIRONMENT (CPCE)	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
FY 2016 Plans: Create/Communicate/Rehearse Orders					
Title: SW Dev - Infrastructure (Execute Tactical NetOps) Description: Provides implementation of tools to support consolidation of products and information produced during the planning process and then supports automatic generation of orders with ability to disseminate those orders across the command.			-	-	1.150
FY 2016 Plans: Execute Tactical NetOps					
Title: SW Dev - Infrastructure (Quality of Service) Description: Quality of Service is the marking of network packets so that WIN-T (i.e. the network) can route them according their priority.			-	-	5.500
FY 2016 Plans: Quality of Service					
Title: Software Development - Applications Description: Software Development efforts in support of the implementation of the Command Post Computing Environment (CPCE) include the migration of current Program of Record capability, coordination of software version baselines, design and development of next generation Mission Command capabilities that simplify the User Experience and enhance Situational Understanding, and design/coding of Software Development Kits (SDKs).			-	-	2.711
FY 2016 Plans: Funding supports system engineering and software development efforts to build applications for CP CE version 3. The Primary applications development efforts include, but are not limited to: 1) C2 On-The-Move: Provides key leaders and staffs the ability to maintain situational understanding and access to information when transitioning between operational nodes (dismounted, mounted, and within a command post); 2) Application Marketplace: Provides users the ability to discover and access variety of CP CE web applications available without having all applications predefined or preinstalled on end user device. Provide users with applications that utilize common software functions (i.e. security); 3) JIIM Interoperability: Provides the capability and interoperability services for improved exchange of information, collaboration, and full interaction with Joint, Interagency, Intergovernmental, and Multinational stakeholders comprising Unified Action Partners.					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software		Project (Number/Name) EJ4 / COMMAND POST COMPUTING ENVIRONMENT (CPCE)	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
The CPCE applications efforts will enable migration of the logistics and maneuver critical capabilities to CP CE, create a single map for Commander, and simplify the user interface. This effort will lead to a CP CE Application Critical Design Review (CDR).					
Title: Test and Evaluation			-	-	12.663
Description: Test and Evaluation efforts include the planning and conduct of Test, Evaluation, and Integration events in support of CPCE development. Testing can consists of stand-alone capability testing in a lab/sandbox environment or full interoperability testing with multiple systems in an operational environment.					
FY 2016 Plans: Test software capability of the core CP CE infrastructure, as well as establish tools and processes for 3rd party application testing and accreditation. Test and Evaluation efforts include the planning and conduct of Test, Evaluation, and Integration events in support of CP CE development. This includes participation in Network Integration Exercises (NIEs), User Juries, Assessments, Risk Reduction Events (RREs), Vulnerability testing, and Army Interoperability Certification (AIC) testing.					
Title: Program Management			-	-	8.179
Description: Program management includes overall management of program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning meetings and IPTs.					
FY 2016 Plans: During this timeframe, will provide overall management and oversight of the implementation of CPCE. Technical Area support of this effort includes System Development (Hardware, Software, and Network), System Analysis of Program of Record (PoR) systems and Future Systems, Technical Readiness Assessments, and Stakeholder Technical Interchange Meetings/Events. Business Area support of this effort will require the coordination of multiple contracts, vendors, contract vehicles, and funding. This support includes the creation and implementation of Functional Support Agreements between PM Mission Command and various Government support agencies such as the CECOM Research Development and Engineering Command (CERDEC), and other PEOs (e.g. PEO IEW&S). Program Management efforts in the FY16 timeframe will also include business area support to ensure funding and contracts are planned and available for all SW development, system engineering, and T&E efforts.					
Accomplishments/Planned Programs Subtotals			-	-	70.483
C. Other Program Funding Summary (\$ in Millions)					
N/A					
Remarks					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / <i>Army Tactical Command & Control Hardware & Software</i>	Project (Number/Name) EJ4 / <i>COMMAND POST COMPUTING ENVIRONMENT (CPCE)</i>
<u>D. Acquisition Strategy</u> The Department of the Army, Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA/ALT) directed the creation of the Command Post Computing Environment (CPCE) as part of the overall Common Operating Environment (COE) Directive for Program Executive Offices (PEOs) in December 2011. To accomplish the goals of the CPCE, PEO IEW&S and PEO C3T (as co-Leads for CPCE) will architect, design, and develop the hardware, software, network solutions and capabilities required to achieve compliance with the COE. Primary Systems Architecture Engineering will be conducted by in-house Government engineering staff with support from CERDEC matrix elements and MITRE Corp (an FFRDC). Primary Software Development efforts will be conducted by contractor firms (to be determined as the planned Mission Command System Engineering contract has not yet been awarded), with support from the CECOM Software Engineering Center (SEC) and the Aviation and Missiles RDEC (AMRDEC) Software Engineering Directorate (SED). Test and Evaluation support will be provided by Government technical staff, with support from contractor firms for preparation and conduct of specific risk reduction events and test events. Developmental testing will be conducted by the software development teams with Government oversight and coordination. Hardware to support system architecture and software development will be Commercial-Off-the-Shelf (COTS) equipment and will be procured using existing contract vehicles such as Common Hardware Systems (CHS) and Army Computer Hardware Enterprise Software and Solutions (CHESS). Software licenses will be procured via CHESS through authorized resellers. CPCE is not a Program of Record (PoR). <u>E. Performance Metrics</u> N/A		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software						Project (Number/Name) EJ4 / COMMAND POST COMPUTING ENVIRONMENT (CPCE)			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
PM Support (Gov't-Core)	Sub Allot	PM Mission Command : APG, MD	0.000	-		-		1.970	Oct 2015	-		1.970	-	1.970	-
PM Support (Gov't-Matrix)	IA	Various Matrix Orgs incl CECOM SEC, LRC, G8, G2, PRD, et al) : APG, MD	0.000	-		-		1.970	Oct 2015	-		1.970	-	1.970	-
PM Support (SETA Contractor)	C/CPFF	Multiple incl CSC and others : APG, MD	0.000	-		-		4.239	Dec 2015	-		4.239	-	4.239	-
Subtotal			0.000	-		-		8.179		-		8.179	-	8.179	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Software Development - Infrastructure	C/Various	SW Dev Contractors and Multiple Matrix Orgs : APG, MD	0.000	-		-		46.930	Dec 2015	-		46.930	-	46.930	-
Software Development - Applications	C/Various	SW Dev Contractors and Multiple Matrix Orgs : APG, MD	0.000	-		-		2.711	Dec 2015	-		2.711	-	2.711	-
Subtotal			0.000	-		-		49.641		-		49.641	-	49.641	-
Remarks Software Development efforts will be managed by through a combination of PM Mission Command technical staff, Matrix Organizations (CERDEC, AMRDEC) and software development contractor firms (contracts and task orders to be determined and competed as necessary).															

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) EJ4 / COMMAND POST COMPUTING ENVIRONMENT (CPCE)					

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Develop and Conduct Tests and Assessments	MIPR	Multiple Test Agencies : Multiple Locations (Primary APG)	0.000	-		-		12.663	Dec 2015	-		12.663	-	12.663	-
Subtotal			0.000	-		-		12.663		-		12.663	-	12.663	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	-	70.483	-	70.483	-	70.483	-

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software										Project (Number/Name) EJ4 / COMMAND POST COMPUTING ENVIRONMENT (CPCE)																	
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										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
COE V2										COE V2																											
COE V2 Test & Integration (RDTE)										COE V2 T&I																											
(1) AWA 16.1										AWA 16.1 1																											
(2) NIE 16.2										2 NIE 16.2																											
(3) AWA 17.1										AWA 17.1 3																											
(4) NIE 17.2										4 NIE 17.2																											
COE V3										COE V3																											
COE V3 Arch, System Engr & Dev (RDTE)										COE V3 SE & Dev																											
COE V3 Test & Integration (RDTE)										COE V3 T&I																											
(5) AWA 18.1										AWA 18.1 5																											
(6) NIE 18.2										6 NIE 18.2																											
(7) AWA 19.1										AWA 19.1 7																											
(8) NIE 19.2										8 NIE 19.2																											

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software								Project (Number/Name) EJ4 / COMMAND POST COMPUTING ENVIRONMENT (CPCE)																			
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										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
COE V4																		COE V4																			
COE V4 Arch, System Engr & Dev (RDTE)																		COE V4 SE & Dev																			
COE V4 Test & Integration (RDTE)																		COE V4 T&I																			

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) EJ4 / COMMAND POST COMPUTING ENVIRONMENT (CPCE)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
COE V2	2	2012	3	2022
COE V2 Test & Integration (RDTE)	1	2016	2	2017
AWA 16.1	1	2016	1	2016
NIE 16.2	3	2016	3	2016
AWA 17.1	1	2017	1	2017
NIE 17.2	3	2017	3	2017
COE V3	1	2016	3	2022
COE V3 Arch, System Engr & Dev (RDTE)	1	2016	3	2018
COE V3 Test & Integration (RDTE)	2	2017	3	2019
AWA 18.1	1	2018	1	2018
NIE 18.2	3	2018	3	2018
AWA 19.1	1	2019	1	2019
NIE 19.2	3	2019	3	2019
COE V4	2	2016	4	2019
COE V4 Arch, System Engr & Dev (RDTE)	2	2017	3	2021
COE V4 Test & Integration (RDTE)	2	2020	4	2021

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) EJ5 / MOUNTED COMPUTING ENVIRONMENT (MCE)			
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
EJ5: MOUNTED COMPUTING ENVIRONMENT (MCE)	-	-	-	12.370	-	12.370	15.669	18.798	16.994	7.839	-	71.670
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note This project is not a new start program. Mounted Computing Environment (MCE), Proj/PE 604818.EJ5 funds are being realigned from Proj/PE 0604805A/593 – Joint Battle Command - Platform (JBC-P), as directed by the Army Acquisition Executive (AAE). This funding line segregates the costs of MCE from JBC-P.												
A. Mission Description and Budget Item Justification The MCE is one of the six computing environments (CEs) formalized by the AAE under the Common Operating Environment (COE). The effort was established by the AAE Directive to Program Executive Offices dated 20 December 2011. MCE standardizes end-user environments and enables streamlined deployment of new warfighting applications. The Joint Battle Command - Platform (JBC-P) is the foundational element and core software platform of the MCE. Future development of the MCE will continue to leverage JBC-P hardware and software to consolidate and integrate multiple warfighting systems in the Platform (Mounted) environment. This integrated MCE, with its open standards, enhanced interoperability, and simplified end-user interface will speed delivery of new Mission Command applications to the warfighter while improving the effectiveness and value of current systems. Requirements for the MCE are established in the AAE Directive Memo, the JBC-P Capability Development Document (CDD), and in the Mounted Computing Environment Information System Initial Capabilities Document (MCE IS ICD) (DRAFT). FY 2016 funding provides the means to continue to manage and develop MCE, which has a larger horizontal scope than the foundational element (JBC-P), as it specifically works toward achieving CE and COE goals.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Software Development Description: Develop capabilities, product applications, platform interoperability, and system services for the Mounted Computing Environment (MCE), part of the Common Operating Environment (COE). Effort includes the development of unique software and integration capabilities. Develop multi-level security domains for network, users, and information. FY 2016 Plans: Follow on efforts, begun under the foundational element (JBC-P), to mature the MCE infrastructure based on emerging standards including continued development of automated tools to support compliance with COE standards, development of MCE/COE services (e.g., Single Sign On), and bridging services to other CEs. Develop and integrate approved Cross Cutting Capabilities (CCC) (i.e.: Common Geospatial, Service Discovery over Networks, and Security Services).									-	-	3.711	
Title: Software/Systems Engineering									-	-	4.701	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) EJ5 / MOUNTED COMPUTING ENVIRONMENT (MCE)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Description: Perform Software/Systems Engineering in support of the development of MCE capabilities, applications, and services, to include, but not limited to, conducting engineering studies, software architecture development, system analyses, technical readiness assessments, technical interchange meetings/events, and development of related reports and other deliverables. FY 2016 Plans: Development of software architecture constructs to sustain and integrate existing capability and enable new capability development. System engineering expertise and efforts for the core software platform (infrastructure), JBC-P, specifically in support of COE baselines, focusing on hardware/software integration, engineering, and development of common services across platforms. Includes planning and engineering of future MCE capabilities using COTS (Android), i.e.: Common Authentication; performance characterization on different HW/SW configurations using the Mounted Family of Computer Systems (MFoCS); and coordination of interoperability between external CEs.				
Title: Test, Evaluation and Integration Description: Plan and conduct Integration Events (i.e.: Tests and Assessments) in support of new MCE capabilities, to include participation in Army Warfighter Assessments (AWA) and Network Integration Exercises (NIEs), User Juries, Risk Reduction Events, Vulnerability testing, and Army Interoperability Certification (AIC) testing. FY 2016 Plans: Test software capability of the core MCE infrastructure, as well as establish tools and processes for 3rd party application testing and accreditation. Test and Evaluation efforts include the planning and conduct of Test, Evaluation, and Integration events in support of MCE development. This includes participation in NIEs, User Juries, Assessments, Risk Reduction Events (RREs), Vulnerability testing, and AIC testing.		-	-	2.474
Title: Program Management Description: MCE program management comprises overall management of program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning meetings and IPTs. FY 2016 Plans: Provide technical, logistics and business oversight for MCE software development, system engineering and test activities. Provide governance for externally developed applications including administering the process of application development and testing, and acquisition with external government and non-government entities. Program management functions include funds		-	-	1.484

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) EJ5 / MOUNTED COMPUTING ENVIRONMENT (MCE)	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
execution, contract management, and logistical support to MCE RDT&E activities, as well as participation in the overarching COE management infrastructure.			
Accomplishments/Planned Programs Subtotals		-	12.370
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks There is no other Mounted Computing Environment (MCE) related funding. However, there are efforts ongoing in other PM Mission Command Programs of Record (e.g.: Joint Battle Command - Platform (JBC-P), the foundational element of MCE that directly support the implementation of the MCE.			
D. Acquisition Strategy MCE is not a Program of Record (PoR), it is executed by PM Mission Command (PM MC) PdM JBC-P, which coordinates requirements and efforts with all stakeholders for associated capabilities that will be part of this MCE. The Department of the Army, Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA/ALT) directed the creation of the MCE as part of the overall Common Operating Environment (COE) Directive for Program Executive Offices (PEOs) in December 2011. To accomplish the goals of the MCE, PEO C3T PM Mission Command will architect, design, and develop the hardware, software, and network solutions and capabilities required to achieve compliance with the COE. Primary systems architecture engineering will be conducted by in-house Government engineering staff with support from CERDEC matrix elements and MITRE Corp, a Fully Funded Research and Development Centers. Primary software development efforts will be conducted by the CECOM Software Engineering Center (SEC) and the Aviation and Missiles RDEC (AMRDEC) Software Engineering Directorate (SED). Test and Evaluation support will be provided by in-house PM MC TMD staff, with support from contractor firms for preparation and conduct of specific risk reduction events and test events. Developmental testing will be conducted by the software development teams with Government oversight and coordination. Hardware to support system architecture and software development will be standardized equipment and will be procured using existing contract vehicles such as the Mounted Family of Computer Systems (MFoCS).			
E. Performance Metrics N/A			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) EJ5 / MOUNTED COMPUTING ENVIRONMENT (MCE)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
PM Support (Mixed support: Gov't-Core and Matrix; SETA Contractor)	Various	PM Mission Command : Aberdeen Proving Ground, MD	0.000	-		-		1.484		-		1.484	-	1.484	-
Subtotal			0.000	-		-		1.484		-		1.484	-	1.484	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Software Development	Various	PM Mission Cmd, Multiple Matrix Orgs and SW Dev Contractors : Aberdeen Proving Ground, MD	0.000	-		-		3.711	Oct 2015	-		3.711	-	3.711	-
Software/Systems Engineering	Various	PM Mission Cmd, Multiple Matrix Orgs and SW Dev Contractors : Aberdeen Proving Ground, MD	0.000	-		-		4.701		-		4.701	-	4.701	-
Subtotal			0.000	-		-		8.412		-		8.412	-	8.412	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Test, Evaluation and Integration	MIPR	Multiple Test Agencies; Multiple Locations : Aberdeen Proving Ground, MD	0.000	-		-		2.474		-		2.474	-	2.474	-
Subtotal			0.000	-		-		2.474		-		2.474	-	2.474	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software					Project (Number/Name) EJ5 / MOUNTED COMPUTING ENVIRONMENT (MCE)		
	Prior Years	FY 2014	FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	-		12.370		-		12.370	-	12.370	-
Remarks												

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity

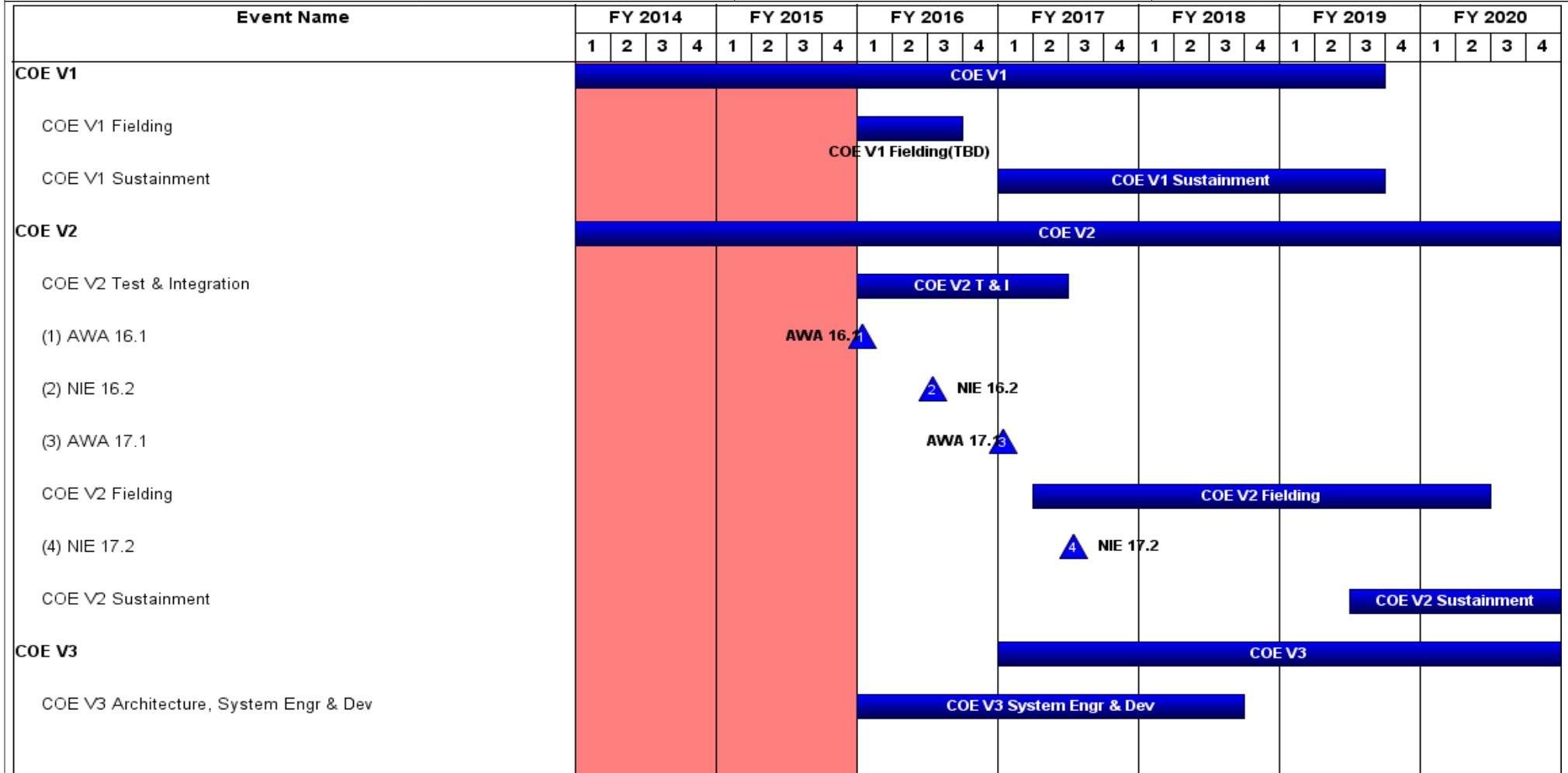
2040 / 5

R-1 Program Element (Number/Name)

PE 0604818A / Army Tactical Command & Control Hardware & Software

Project (Number/Name)

EJ5 / MOUNTED COMPUTING ENVIRONMENT (MCE)



UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software										Project (Number/Name) EJ5 / MOUNTED COMPUTING ENVIRONMENT (MCE)																	
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										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
COE V3 Test & Integration																						COE V3 Test & Integration															
(1) AWA 18.1																						AWA 18.1															
(2) NIE 18.2																						2 NIE 18.2															
(3) AWA 19.1																						AWA 19.1															
(4) NIE 19.2																						4 NIE 19.2															
COE V3 Fielding																						COE V3 Fielding															
COE V4																						COE V4															
COE V4 Architecture, System Engr & Dev																						COE V4 System Engr & Dev															
(5) AWA 20.1																						AWA 20.1															
(6) NIE 20.2																						6 NIE 20.2															
COE V4 Test & Integration																						COE V4 Test & Integration															

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) EJ5 / MOUNTED COMPUTING ENVIRONMENT (MCE)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
COE V1	1	2014	3	2019
COE V1 Fielding	1	2016	3	2016
COE V1 Sustainment	1	2017	3	2019
COE V2	1	2014	4	2022
COE V2 Test & Integration	1	2016	2	2017
AWA 16.1	1	2016	1	2016
NIE 16.2	3	2016	3	2016
AWA 17.1	1	2017	1	2017
COE V2 Fielding	2	2017	2	2020
NIE 17.2	3	2017	3	2017
COE V2 Sustainment	3	2019	4	2021
COE V3	1	2017	4	2021
COE V3 Architecture, System Engr & Dev	1	2016	3	2018
COE V3 Test & Integration	2	2017	3	2019
AWA 18.1	1	2018	1	2018
NIE 18.2	3	2018	3	2018
AWA 19.1	1	2019	1	2019
NIE 19.2	3	2019	3	2019
COE V3 Fielding	3	2019	2	2022
COE V4	2	2016	4	2026
COE V4 Architecture, System Engr & Dev	2	2017	2	2022
AWA 20.1	1	2020	3	2021

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software		Project (Number/Name) EJ5 / MOUNTED COMPUTING ENVIRONMENT (MCE)	
	Start		End	
Events	Quarter	Year	Quarter	Year
NIE 20.2	3	2020	4	2020
COE V4 Test & Integration	2	2020	2	2022

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) EJ6 / TACTICAL ENHANCEMENT			
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
EJ6: TACTICAL ENHANCEMENT	-	-	-	13.278	-	13.278	12.024	-	-	-	-	25.302
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note This project element is a new start.												
A. Mission Description and Budget Item Justification Tactical Enhancement supports testing requirements for capabilities procured and fielded under the Signal Modernization funding line B00010. Signal Modernization will modernize legacy terrestrial communications links and increase capacity of the Expeditionary Signal Battalions. It will also provide transport convergence for Warfighter Information Network- Tactical (WIN-T) Increment 1 units, bringing their legacy stovepipe transport systems into the WIN-T network, including Top Secret Intel, Medical, and Sustainment communications systems. Funding will be used for testing, specifically Interoperability certification, and Network testing for Brigade Combat Team(BCT) and Theater Intel Transport Convergence in FY16 and Initial Operational Test & Evaluation (IOT&E) for terrestrial communications (Tactical Network Transmission (TNT) Systems) in FY17.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Title: BCT/Theater Testing for TS-SCI Security Enclave										-	-	13.278
Description: Testing requirement												
FY 2016 Plans: BCT/Theater testing of Top Secret - Sensitive Compartmented Information (TS-SCI) Security Enclave in support of Transport Convergence.												
Accomplishments/Planned Programs Subtotals										-	-	13.278
C. Other Program Funding Summary (\$ in Millions) N/A												
Remarks												

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / <i>Army Tactical Command & Control Hardware & Software</i>	Project (Number/Name) EJ6 / <i>TACTICAL ENHANCEMENT</i>
<u>D. Acquisition Strategy</u> This funding will provide enhancements and improvements to the WIN-T tactical ground networks. It will integrate Commercial-Off-the-Shelf (COTS) capabilities into WIN-T nodes for capabilities to expand network capacity and user access. The capabilities' requirements are captured in the Transmission Systems Capability Production Document (CPD). Some of the capabilities will be integrated into existing end items through Modification Work Orders. Cellular and wireless phone capabilities for ESB units as well as Modular Communications Node - Advanced Equipment (MCNAE), to integrate a Top Secret - Sensitive Compartmented Information (TS-SCI) Security Enclave into WIN-T will be integrated in FY16 – FY20. Other capabilities, to replace legacy equipment in the field, will be acquired as ACAT III programs, utilizing the DoDI 5000.02 standard acquisition approach starting with Milestone C determination in 4Q16. These include replacement systems for troposcatter and line of sight radio terminals to connect WIN-T nodes with broadband data links, relieving some of the burden on SATCOM. <u>E. Performance Metrics</u> N/A		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software						Project (Number/Name) EJ6 / TACTICAL ENHANCEMENT			

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Testing	TBD	ATEC : Aberdeen Proving Ground, MD	0.000	-		-		13.278		-		13.278	-	13.278	-
Subtotal			0.000	-		-		13.278		-		13.278	-	13.278	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		13.278		-		13.278	-	13.278	-

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software								Project (Number/Name) EJ6 / TACTICAL ENHANCEMENT																
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	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				
(1) Transmission Systems CPD	Mod in Service				CPD 1																											
Production / Fielding of Modification in Service sytems (CCE, MCNAE, 4					systems																											
(2) MDD for Tactical Network Transmission (TNT) Systems (TROPO and									MDD 2																							
BCT Testing for TS-SCI support									BCT Testing for TS-SCI																							
Theater Testing for TS-SCI support									Theater Testing for TS-SCI																							
(3) MS C for TNT systems													MS C 3																			
IOT&E for TNT (TROPO and TRILOS)													Terrestrial communications																			
(4) IOC for TNT systems																	IOC 4															
(5) FRP for TNT systems																					FRP 5											
Production/ Fielding of TNT systems																					TNT											

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / <i>Army Tactical Command & Control Hardware & Software</i>	Project (Number/Name) EJ6 / <i>TACTICAL ENHANCEMENT</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Transmission Systems CPD	2	2015	2	2015
Production / Fielding of Modification in Service systems (CCE, MCNAE, 4G & WiFi)	3	2015	4	2021
MDD for Tactical Network Transmission (TNT) Systems (TROPO and TRILOS)	4	2015	4	2015
BCT Testing for TS-SCI support	1	2016	1	2016
Theater Testing for TS-SCI support	3	2016	3	2016
MS C for TNT systems	4	2016	4	2016
IOT&E for TNT (TROPO and TRILOS)	3	2017	3	2017
IOC for TNT systems	4	2017	4	2017
FRP for TNT systems	2	2018	2	2018
Production/ Fielding of TNT systems	3	2018	4	2022

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) EJ7 / TACTICAL DIGITAL MEDIA			
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
EJ7: TACTICAL DIGITAL MEDIA	-	-	-	1.300	-	1.300	2.500	-	-	-	-	3.800
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Tactical Digital Media (TDM), Proj/PE 654818.EJ7 is a new funding line in FY16.												
A. Mission Description and Budget Item Justification FY16 funds will be used to test representative candidate Commercial Off The Shelf (COTS) Non-Developmental Item (NDI) camera and video equipment for effectiveness, suitability, and reliability under combat conditions to support material solutions for procurement. Tactical Digital Media (TDM) is comprised of photo, video and audio recording and editing equipment that will be assembled and issued as variant kits tailored to unit mission requirements. TDM kits address modernization gaps associated with all operational Combat Camera (COMCAM), Public Affairs (PA), and Military Information Support Operations (MISO) units. TDM provides essential imagery, multimedia products, and live interview capabilities that directly contribute to successful execution of a Commander's strategic engagement and communications strategy across the full range of military operations. TDM also provides specific imagery, video, and multimedia support to commanders through the National Command Authority (NCA) level to assist with operational planning, decision-making, combat adversary misinformation/disinformation, alter perceptions regarding coalition efforts, and provide accurate and timely information to national and international audiences. Proposed TDM equipment is entirely COTS/NDI currently in use by military organizations and commercial industry.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Test and Evaluation Description: Test and evaluation of capabilities/equipment in order to assess emerging technologies before they are released for Army use; testing will be performed on hardware and/or software. FY 2016 Plans: Photo, video, audio recording and editing equipment will be identified, evaluated and tested in order to assess components of variant kits that support multiple mission requirements across multiple visual information (VI) disciplines.									-	-	1.146	
Title: Program Management Description: Program Management comprises overall mangement of program execution, major events, reporting, funds execution, and contract management. Includes participation in program planning meetings and IPTs. FY 2016 Plans:									-	-	0.154	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) EJ7 / TACTICAL DIGITAL MEDIA				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Provide technical and business oversight for TDM evaluation and testing activities. Program management functions include oversight, planning, funds execution and contract mangement support to TDM RDT&E activities.												
Accomplishments/Planned Programs Subtotals										-	-	1.300
C. Other Program Funding Summary (\$ in Millions)												
Line Item	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	
• B68501 Tactical Digital Media (OPA): B68501 Tactical Digital Media (OPA)	-	-	-	-	-	-	4.460	4.956	5.055	-	14.471	
Remarks												
D. Acquisition Strategy												
In accordance with the approved Tactical Digital Media (TDM) Capabilities Production Document (CPD), the Army will be purchasing state-of-the-art Commercial Off The Shelf (COTS) equipment to field media variant kits tailored to unit mission requirements. The equipment will purchased on competitively awarded contracts through Common Hardware Systems (CHS) or Global Tactical Advanced Communication Systems (GTACS) and will include warranties.												
The program strategy for reaching full capability is to identify and field a modern standardized set of digital media capabilities that enables the Army user community to acquire and process digital media/visual information products able to be disseminated within a fully integrated Army tactical network operations environment which includes commercial networks and interfaces. The TDM program will replace legacy analog devices by providing state-of-the art COTS/Non-Developmental Items (NDI) equipment supporting acquire and process operations that is centrally managed and resourced. New technologies and improvements of COTS/NDI equipment will be inserted as part of unit reset, New Equipment Fieldings or upgrades as necessary to provide users with state-of-art capabilities.												
E. Performance Metrics												
N/A												

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software					Project (Number/Name) EJ7 / TACTICAL DIGITAL MEDIA					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
PM Support(Gov't-Core)	Sub Allot	PM Mission Command : PM Mission Command	0.000	-		-		0.154		-		0.154	0.160	0.314	-
Subtotal			0.000	-		-		0.154		-		0.154	0.160	0.314	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Test and Evaluation	C/TBD	Multiple Locations : TBD	0.000	-		-		1.146		-		1.146	2.340	3.486	-
Subtotal			0.000	-		-		1.146		-		1.146	2.340	3.486	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		-		1.300		-		1.300	2.500	3.800	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software										Project (Number/Name) EJ7 / TACTICAL DIGITAL MEDIA																	
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										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
(1) Material Development Decision (MDD)														Target 				 Target																			
(2) Milestone C																																					
Test and Evaluation														Test and Evaluation																							
Hardware Procurements (OPA Funded)																						HW Procurements															

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / <i>Army Tactical Command & Control Hardware & Software</i>	Project (Number/Name) EJ7 / <i>TACTICAL DIGITAL MEDIA</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Material Development Decision (MDD)	3	2015	3	2015
Milestone C	1	2016	1	2016
Test and Evaluation	1	2016	4	2017
Hardware Procurements (OPA Funded)	1	2018	4	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software				Project (Number/Name) EK9 / TACTICAL NETWORK OPERATIONS AND MANAGEMENT			
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
EK9: TACTICAL NETWORK OPERATIONS AND MANAGEMENT	-	-	-	30.744	-	30.744	35.879	35.990	38.289	46.657	-	187.559
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Tactical Network Operations (NetOps) and Management (TNOM) is the program which will develop and integrate the Tactical NetOps software capabilities in support of NetOps Convergence, Army Objectives and emerging Cyber Center Of Excellence (CCOE) requirements. The end state program is designed to synchronize LandWarNet NetOps efforts in an integrated and interoperable framework, spanning all echelons of command and supporting the full range of military operations for Army, Joint, and Coalition Forces in order to ensure converged NetOps. The initial mission is convergence of all Tactical Defensive Cyber Operations (DCO) and DoD Information Network (DoDIN) functions into a single integrated set of Tactical NetOps and Management software. This integrated solution provides NetOps capability from the Soldier to the Theater network entry point and supports the Implementation of the Integrated Tactical NetOps (ITNO) Capability Production Document (CPD).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Product Development									-	-	26.667	
Description: Network Operations Development												
FY 2016 Plans: FY16 initiates the Engineering Design and Development for Network Operations software in support of the Integrated Tactical NetOps (ITNO) Capability Production Document which further integrates existing capability and extends that capability down to the Battalion Level. This funding initializes the program and funds the development effort for the first build cycle. FY16 also funds initial delivery of architecture products that help drive subsequent builds.												
Title: Test and Evaluation									-	-	0.980	
Description: Testing and Evaluating NetOps												
FY 2016 Plans: Funds T&E planning and development of Test Evaluation Master Plan. Support to Material Development Decision and other program initiation efforts.												
Title: Management Services									-	-	3.097	
Description: Program Management Support												

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software	Project (Number/Name) EK9 / TACTICAL NETWORK OPERATIONS AND MANAGEMENT	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
FY 2016 Plans: Program Management Support			
Accomplishments/Planned Programs Subtotals		-	30.744
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy The Product Manager for Tactical Network Operations (NetOps) and Management (TNOM) stands up in FY 16 with the mission of convergence all NetOps functions into a single integrated set of TNOM software. The plan calls for a Material Development Decision (MDD) in early FY16 with the program entering the Engineering Manufacturing and Development (EMD) phase post Milestone B. The current strategy will provide software builds with incremental releases to program offices, such as WIN-T Inc 1 and Inc 2, for fielding and sustainment. This integrated solution provides NetOps capability from the Soldier to the Theater network entry point. Integrated Tactical Network Operations (ITNO) provides battalion and above G6/S6 Network Managers and the G3/S3 and staff of Signal organizations with an integrated and standardized set of NetOps capabilities allowing them to plan, configure, manage, monitor, control and secure/defend their organic /assigned/attached Upper Tactical Internet (UTI)/Lower Tactical Internet (LTI) assets. The program priorities of efforts are: 1. Develop and implement a bridge between the UTI and LTI supporting operations and capability set fielding until delivery of an integrated solution. 2. Further Integrate all UTI and LTI transport systems into a single integrated set of tools. 3. Initial integration of all Army Battle Command Systems (ABCS) systems application management and the Transport management into a single set of NetOps tools. 4. Develop and implement an integration approach for managing all tactical NetOps functions from the tactical network entry point down to the Soldier. This program implements the Integrated Tactical NetOps Capability Production Document currently in development within Training and Doctrine Command, with Joint Requirements Oversight Committee approval anticipated in late FY15.			
E. Performance Metrics N/A			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software						Project (Number/Name) EK9 / TACTICAL NETWORK OPERATIONS AND MANAGEMENT					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
TNOM NetOps Program Management Support	C/TBD	Various : Various	0.000	-		-		3.097		-		3.097	-	3.097	-
Subtotal			0.000	-		-		3.097		-		3.097	-	3.097	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
TNOM NetOps Development	C/TBD	TBD : TBD	0.000	-		-		26.667		-		26.667	-	26.667	-
Subtotal			0.000	-		-		26.667		-		26.667	-	26.667	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Test and Evaluation Planning	C/TBD	Various : Various	0.000	-		-		0.980		-		0.980	-	0.980	-
Subtotal			0.000	-		-		0.980		-		0.980	-	0.980	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		-		30.744		-		30.744	-	30.744	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																	Date: February 2015															
Appropriation/Budget Activity										R-1 Program Element (Number/Name)										Project (Number/Name)												
2040 / 5										PE 0604818A / Army Tactical Command & Control Hardware & Software										EK9 / TACTICAL NETWORK OPERATIONS AND MANAGEMENT												
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	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				
(1) CPD Approved					CPD Approved				1																							
(2) MDD					MDD				2																							
(3) MS B													MS B				3															
(4) Contract Award Bld 6.0													Contract Award Bld 6.0				4															
FQT Bld 6.0																	FQT Bld 6.0															
(5) Contract Award Bld 7.0																	Contract Award Bld 7.0				5											
(6) LFD Bld 6.0																	LFD Bld 6.0				6											
(7) Task Order Bld 7.1																	Task Order Bld 7.1				7											
FQT Bld 7.0																					FQT Bld 7.0											
OT/LUT Bld 7.0																	OT/LUT Bld 7.0															
(8) LDD Bld 7.0																					LDD Bld 7.0				8							
FQT Bld 7.1																					FQT Bld 7.1											
(9) Task Order Bld 8.0																					Task Order Bld 8.0				9							

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604818A / Army Tactical Command & Control Hardware & Software								Project (Number/Name) EK9 / TACTICAL NETWORK OPERATIONS AND MANAGEMENT																			
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										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
(1) LDD Bld 7.1																										LDD Bld 7.1											
FQT Bld 8.0																										FQT Bld 8.0											
(2) Task Order Bld 8.1																										Task Order Bld 8.1											
OT/LUT Bld 8.0																										OT/LUT Bld 8.0											

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / <i>Army Tactical Command & Control Hardware & Software</i>	Project (Number/Name) EK9 / <i>TACTICAL NETWORK OPERATIONS AND MANAGEMENT</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CPD Approved	4	2015	4	2015
MDD	1	2016	1	2016
MS B	3	2016	3	2016
Contract Award Bld 6.0	3	2016	3	2016
FQT Bld 6.0	1	2017	1	2017
Contract Award Bld 7.0	1	2017	1	2017
LFD Bld 6.0	3	2017	3	2017
Task Order Bld 7.1	1	2018	1	2018
FQT Bld 7.0	1	2018	2	2018
OT/LUT Bld 7.0	3	2018	3	2018
LDD Bld 7.0	1	2019	1	2019
FQT Bld 7.1	1	2019	2	2019
Task Order Bld 8.0	1	2019	1	2019
LDD Bld 7.1	3	2019	3	2019
FQT Bld 8.0	4	2019	4	2019
Task Order Bld 8.1	1	2020	1	2020
OT/LUT Bld 8.0	3	2020	3	2020