Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604818A *I Army Tactical Command & Control Hardware & Software*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	29.690	131.639	205.590	-	205.590	210.427	175.703	109.485	132.599	Continuing	Continuing
323: *Common Hardware Systems*	-	4.504	4.779	4.771	-	4.771	5.042	5.399	6.121	14.141	Continuing	Continuing
334: *Common Software*	-	8.144	18.384	3.303	-	3.303	0.850	1.001	0.334	0.167	Continuing	Continuing
C29: *Centralized Technical Support Facility (CTSF)*	-	7.874	3.203	2.617	-	2.617	1.347	0.000	0.000	0.000	0.000	15.041
C34: *Army Tac C2 Sys Eng*	-	9.168	8.842	8.881	-	8.881	9.094	9.151	9.259	9.497	Continuing	Continuing
EJ4: *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	-	0.000	70.483	82.091	-	82.091	98.078	63.689	5.906	15.004	Continuing	Continuing
EJ5: *MOUNTED COMPUTING ENVIRONMENT (MCE)*	-	0.000	12.370	15.271	-	15.271	18.606	16.814	7.668	8.683	0.000	79.412
EJ6: *TACTICAL ENHANCEMENT*	-	0.000	12.278	11.864	-	11.864	0.000	0.000	0.000	3.000	0.000	27.142
EJ7: *TACTICAL DIGITAL MEDIA*	-	0.000	1.300	2.467	-	2.467	0.000	0.000	0.000	0.000	0.000	3.767
EK9: *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	-	0.000	0.000	39.264	-	39.264	66.588	68.751	69.129	70.755	0.000	314.487
EQ8: *Mobile/Handheld Computing Environment (M/HHCE)*	-	0.000	0.000	10.563	-	10.563	10.822	10.898	11.068	11.352	Continuing	Continuing
EW3: *Unit Task Reorganization (UTR) Development*	-	0.000	0.000	24.498	-	24.498	0.000	0.000	0.000	0.000	0.000	24.498

Note

Project EQ8 is a realignment of effort previously funded in 0604827A.S75.

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

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604818A *I 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.

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.

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
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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 DoD Information Network (DoDIN) functions into a single integrated set of Tactical NetOps and Management software. This integrated solution provides NetOps capability to manage Tactical Networks from the Soldier to the Theater network entry point and supports the implementation of the Integrated Tactical NetOps (ITNO) Increment 1 Capability Production Document (CPD). TNOM will deliver a standardized visualization capability (integrating both Upper and Lower Tactical Internet NetOps) in order to reduce complexity and inform the military decision making processes. TNOM will also provide enhanced capability to detect, respond, and restore from cyber incidents.

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.

Project EQ8, Mobile/Handheld Computing Environment supports the Nett Warrior (NW) Program (named in honor of Medal of Honor recipient Colonel Robert C. Nett), also known as the Ground Soldier System (GSS) Program. The program leverages commercial smart devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations. The NW system provides leaders electronic real-time information on friendly positions; information about enemy activity and movement; navigational data and map imagery; a collaborative planning tool; and other mission related graphics which effectively puts the power of the entire Army tactical network in the hands of the dismounted leader.

As the ARMY's tactical network continues to evolve from a loose federation of stove-piped systems to a single, intergrated, service-oriented and standards-based environment, Unit Task Reorganization (UTR) development capabilites must also evolve in the same manner. Today, UTR is a complex, manually intensive, and time-consuming process. This is due, in part, to the large increase in network-enabled nodes within the tactical network. In addition, tools employed by the G/S-6 staff to conduct UTR are desgined, developed,and fielded by various program and product managers, each with discrete requirements, developmental schedules, and funding lines. This impredes the G/S-6 Staff's ability to conduct UTR in an integrated manner. To enhance UTR, we will address five fundamental challenes to improve UTR. Efficients data sharing is a fundamental charactersitic of mondern-day integrated systems. The ability to read, modify, and exchange data in a uniform and efficient manner is essential to achieve an integrated UTR System.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0604818A *I Army Tactical Command & Control Hardware & Software*		
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	29.675	163.643	188.956	-	188.956
Current President's Budget	29.690	131.639	205.590	-	205.590
Total Adjustments	0.015	-32.004	16.634	-	16.634
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-31.744			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.190	-0.260			
• SBIR/STTR Transfer	-0.175	-			
• Adjustments to Budget Years	-	-	16.634	-	16.634

Change Summary Explanation

FY17 $16.634M Growth is a net change driven by:
323: -0.253M
334: -21.99M
C29: +2.617M
C34: -0.313M
EJ4: -1.282M
EJ5: -0.398M
EJ6: -0.160M
EJ7: -0.033M
EK9: +3.385M
EQ8: +10.563M - Not a new start;
EW3: Program funded with 24.498M.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
323: *Common Hardware Systems*	-	4.504	4.779	4.771	-	4.771	5.042	5.399	6.121	14.141	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 2017 funds support CHS to continue to manage the acquisition and delivery of CHS equipment and associated services in support of customer requirements. It will also provide technology insertions and the continued support for hardware and systems engineering, and evaluations. CHS will continue CHS-5 contract pre-award activities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Acquisition Management, System/ Configuration Management, and technical evaluation and testing of CHS equipment and services in support of program requirements	3.904	3.929	3.729
Description: Funding is provided for the following effort			
FY 2015 Accomplishments: 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.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will continue the management of the acquisition/delivery, System/ Configuration Management, implementing Army initiatives, supporting sustainment of items procured, and technical evaluation and testing of CHS equipment in support of customer requirements.			
Title: CHS Technology Insertion in support of program capability requirements ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Continue CHS Technology Insertion in support of program capability requirements. ***FY 2016 Plans:*** Continue CHS Technology Insertion in support of program capability requirements. ***FY 2017 Plans:*** Continue CHS Technology Insertion in support of program capability requirements.	0.600	0.600	0.800
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. ***FY 2017 Plans:*** Non Recurring Engineering (NRE) Costs for New CHS-5 Products.	-	0.250	0.242
Accomplishments/Planned Programs Subtotals	4.504	4.779	4.771

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The overall goal is to improve interoperability, compatibility and sustainability 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.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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CHS also conducts common environmental 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 FY18 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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Costs	C/FP	Various : Various	77.646	2.130	Dec 2014	1.975	Dec 2015	1.875	Dec 2016	-		1.875	Continuing	Continuing	Continuing
Product Procurement	C/FP	Various : Various	86.790	1.774	Dec 2014	1.954	Dec 2015	1.854	Dec 2016	-		1.854	Continuing	Continuing	Continuing
Technology Insertion	C/FP	Various : Various	15.777	0.600	Dec 2014	0.600	Dec 2015	0.800	Dec 2016	-		0.800	Continuing	Continuing	Continuing
CHS-5 Non-Recurring Engineering	C/FP	Various : Various	0.000	-		0.250	Dec 2015	0.242	Dec 2016	-		0.242	Continuing	Continuing	Continuing
		Subtotal	180.213	4.504		4.779		4.771		-		4.771	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	180.213	4.504		4.779		4.771		-		4.771	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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*

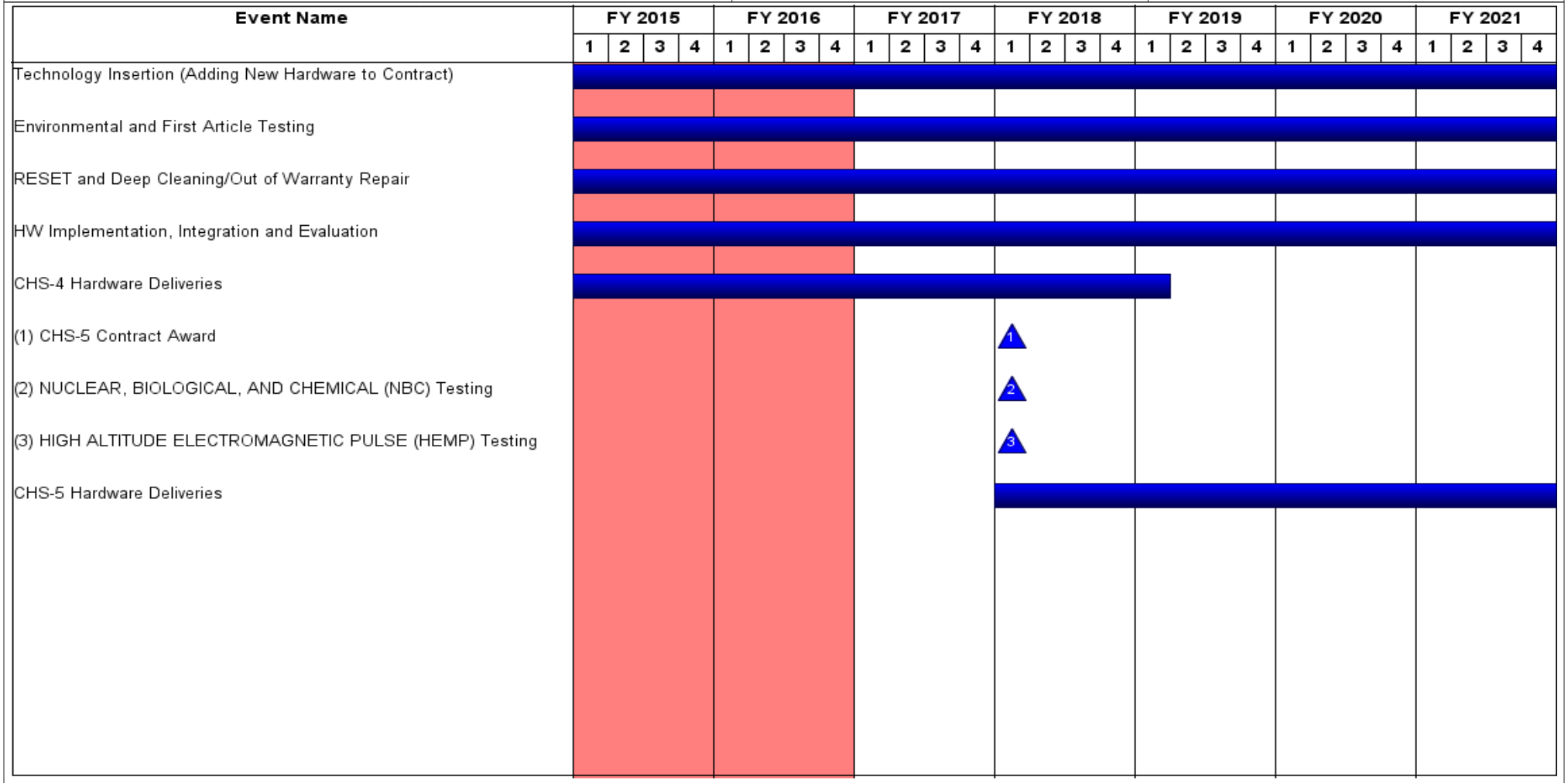

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Technology Insertion (Adding New Hardware to Contract)	1	2007	4	2021
Environmental and First Article Testing	1	2006	4	2021
RESET and Deep Cleaning/Out of Warranty Repair	1	2006	4	2021
HW Implementation, Integration and Evaluation	1	2006	4	2021
CHS-4 Hardware Deliveries	1	2012	1	2019
CHS-5 Contract Award	1	2018	1	2018
NUCLEAR, BIOLOGICAL, AND CHEMICAL (NBC) Testing	1	2018	1	2018
HIGH ALTITUDE ELECTROMAGNETIC PULSE (HEMP) Testing	1	2018	1	2018
CHS-5 Hardware Deliveries	1	2018	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
334: *Common Software*	-	8.144	18.384	3.303	-	3.303	0.850	1.001	0.334	0.167	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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 the greater C4ISR community. 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 program is a cornerstone in the Army's Common Operating Environment (COE) modernization efforts.

FY17 funding supports backwards compatibility with previous versions of Common Software products in addition to design efforts towards future Command Post Computing Environment (CP CE) implementations. Products include Data Dissemination Services (DDS) and C2 Infrastructure Virtual Machine as foundation for machine-to-machine (M2M) messaging, Cross Cutting Capabilities (CCC), Unit Task Organization, Universal Chat Bridge and Command and Control Registry hosted on Tactical Server Infrastructure (TSI).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Mission Command (MC) systems provide single common software enterprise infrastructure development in support of the C4ISR community ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** 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 ***FY 2017 Plans:*** Funding is provided for Common Software development efforts for backwards compatibility and design of future efforts with messaging standards integration, addressing development, remote configuration and management and widget services	2.133	4.259	1.955
Title: Joint and Coalition interoperability efforts ***Description:*** Provide software for interoperability of Joint and Coalition efforts	1.088	2.450	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: 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 design of future required mission command software services and common software solutions into the Army CP CE versions ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** 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/Handheld 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/Handheld 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	3.097	3.063	-
Title: Software Development - Tactical Server Infrastructure (TSI) ***Description:*** Tactical Server Infrastructure (TSI) 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 TSI providing a common core infrastructure component to the C4ISR architecture ***FY 2016 Plans:*** TSI software application and infrastructure development ***FY 2017 Plans:*** TSI software application and infrastructure development	-	5.262	0.713
Title: Test and Evaluation	0.288	1.562	0.300

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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 Accomplishments:*** 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 Battle Command Common Services (BCCS). Software testing documentation and training and AIC ***FY 2017 Plans:*** Test and Evaluation required for Common Software and Battle Command Common Services (BCCS). Software testing documentation and training and AIC			
Title: Program Management ***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 2015 Accomplishments:*** Program Management - Includes Core, Matrix, and Contractor support ***FY 2016 Plans:*** Program Management - Includes Core, Matrix, and Contractor support ***FY 2017 Plans:*** Program Management - Includes Core, Matrix, and Contractor support	1.538	1.788	0.335
Accomplishments/Planned Programs Subtotals	8.144	18.384	3.303

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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*

D. Acquisition Strategy

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 3-year increments in support of Common Operating Environment (COE) Guidance 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 in part under a Project Manager, Mission Command (PM MC) General Services Administration (GSA) engineering services contract approach which will consist of multiple prime contractors competitively bidding on a single development solicitation. 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.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Management	Various	PM Mission Command : Aberdeen, MD	9.608	1.538	Nov 2014	1.788		0.335		-		0.335	Continuing	Continuing	0
		Subtotal	9.608	1.538		1.788		0.335		-		0.335	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Common Software Product Engineering/Software Development	C/CPFF	Various Contractors : Various Locations	0.000	-		4.259	Apr 2016	1.955	Apr 2017	-		1.955	Continuing	Continuing	0
Mission Command/Army System Engineering & Integration	C/CPFF	Future Skies : Wall Township, NJ	6.631	2.133	Mar 2015	-		-		-		-	0	8.764	6.679
Engineering & Integration for Joint and Coalition Interoperability	C/CPFF	Various Contractors : Various Locations	0.000	1.088	Mar 2015	2.450	Mar 2016	-		-		-	Continuing	Continuing	0
Evaluation, modification, validation & integration of developed SW	C/CPFF	Various Contractors : Various Locations	0.000	3.097	Mar 2015	3.063	Mar 2016	-		-		-	0	6.160	4.159
Tactical Server Infrastructure and Application Development	C/CPFF	CECOM Software Engineering Center : APG, MD	0.000	-		5.262	Dec 2015	0.713	Dec 2016	-		0.713	Continuing	Continuing	Continuing
		Subtotal	6.631	6.318		15.034		2.668		-		2.668	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total 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	Mar 2016	0.300	Mar 2017	-		0.300	Continuing	Continuing	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	7.145	0.288		1.562		0.300		-		0.300	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.384	8.144		18.384		3.303		-		3.303	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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*

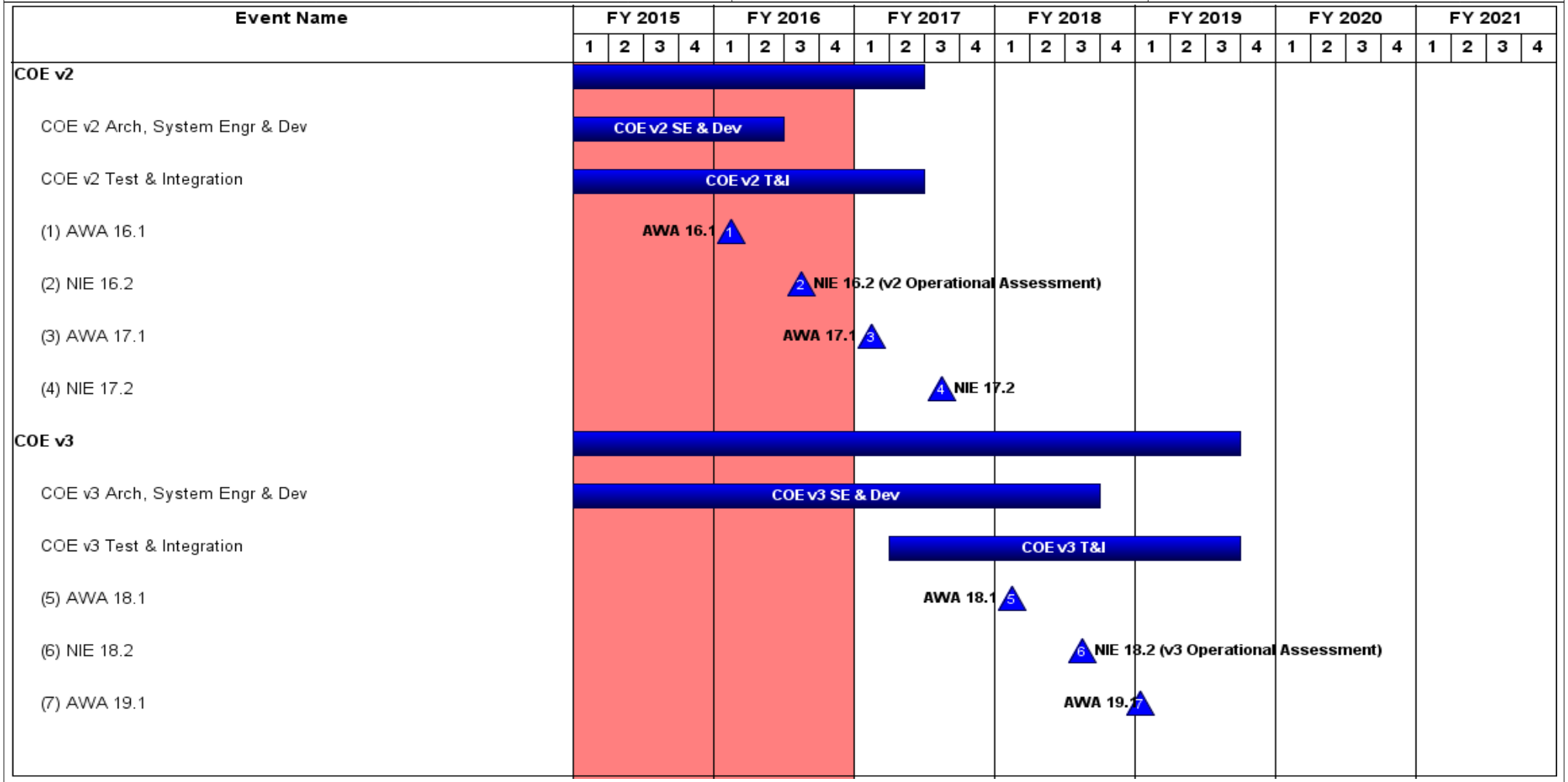

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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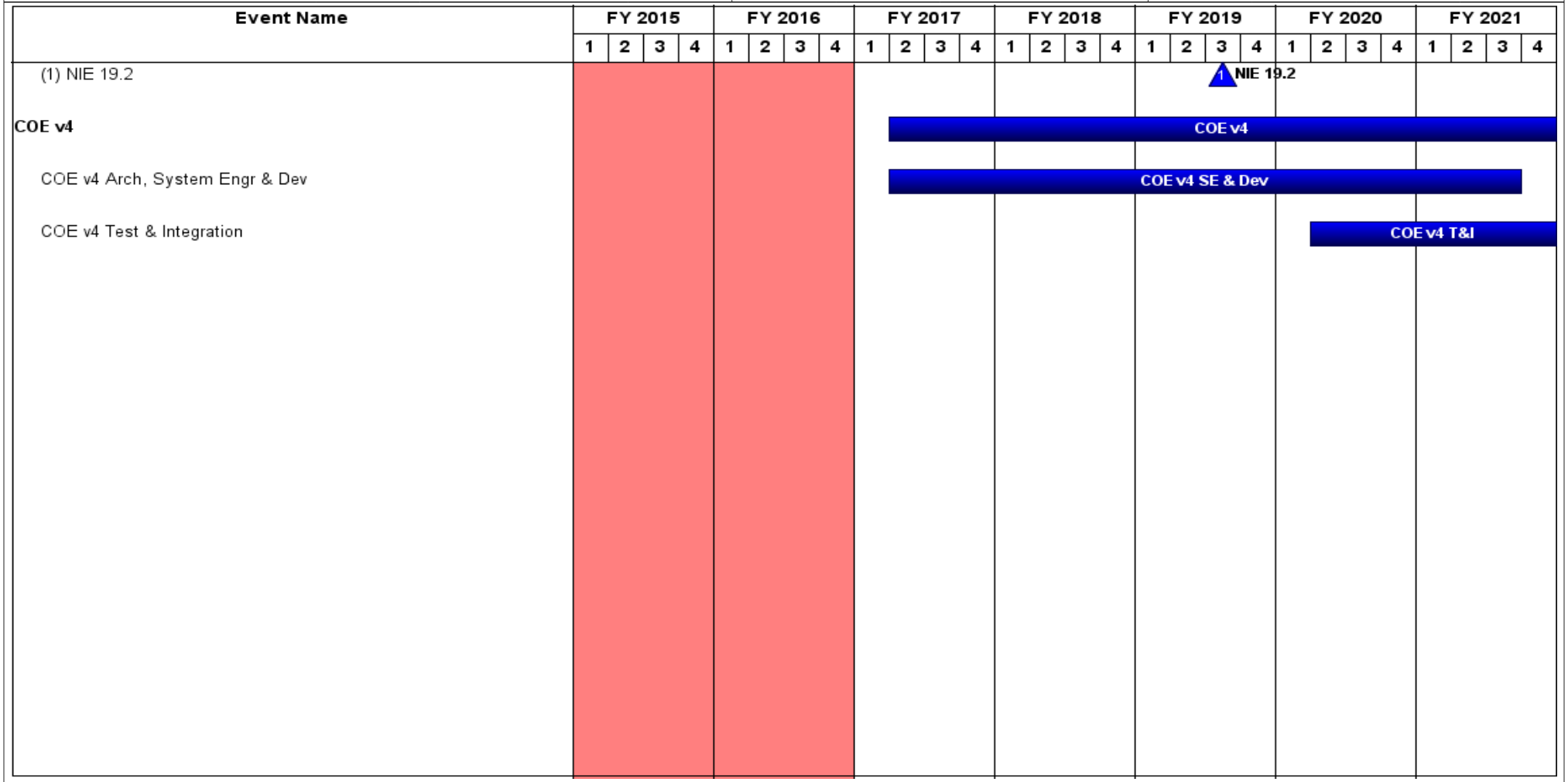

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
COE v2	2	2012	2	2017
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	2019
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	2017	4	2021
COE v4 Arch, System Engr & Dev	2	2017	3	2021
COE v4 Test & Integration	2	2020	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
C29: *Centralized Technical Support Facility (CTSF)*	-	7.874	3.203	2.617	-	2.617	1.347	0.000	0.000	0.000	0.000	15.041
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, functioning as CIO/G6's designated independent test agent. CTSF is the Army's sole strategic facility responsible for conducting engineering support associated with test integration of Army LandWarNet/Mission Command (LWN/MC) architectures and baselines 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 Federation of 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 2015	FY 2016	FY 2017
Title: Army Interoperability Certification (AIC) Testing	6.196	2.111	0.885
Description: Conduct Army Interoperability Certification (AIC), planning/coordination/scheduling/ and reporting of Common Operating Environment (COE) and software block testing (local and distributed). Provide stakeholders data collection/data analysis/data dissemination/simulation/stimulation verification/validation. Manage the set-up, configuration, integration, operations and maintenance of the LandWarNet/Mission Command systems within the CTSF test environments. Function as the CIO/G-6's Independent Test Agent for Program Managers of LWN/MC systems that have an Acquisition Life Cycle requirement for testing of software and associated hardware prior to 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 2015 Accomplishments: Executed integration support/testing/evaluation for SWB2, CS11-12, and COE v1.0 baselines and interoperability through test planning, test case development, information assurance software/compliance scans, and test tool verification. In support of the Assistant Secretary of the Army (Acquisition, Logistics, Technology) [ASA(ALT)], continued work on COE v1.0 and beyond, focusing on technical integration within the Computing Environment (CE) and Control Point (CP) construct, working to define control point specifications between CPs and testing methodology within CEs and between CEs as part of the Army transition to COE strategy. Assisted ASA(ALT) in refining COE architectures and services. Executed Army Interoperability Certification (AIC)			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Events T2.17, T11.12, T11.13. In support of the CIO/G-6 Interoperability and Cyber Integration Branches Network Vulnerability Assessment (NVA) Process Improvement effort, worked with Army Research Laboratory (ARL) Survivability/Lethality Analysis Division (SLAD) to define and document a repeatable cyber process that will provide Program Managers (PMs) the opportunity to mitigate cyber vulnerabilities identified during assessments. ***FY 2016 Plans:*** Continue SWB2, SWB11-12, and COE v1.X and beyond test planning, test case development, test environment architecture set-up, to include information assurance software compliance and software test tools. Upon completion of the ASA(ALT) Interoperability & Integration Event (I2E), conduct COE 1.X and beyond testing/evaluation and certification through execution of the COE v1.X AIC event. Continue to work to define CP specifications between CPs and testing methodology within CEs and between CEs as part of the Army transition to COE strategy, while working to incrementally implement and utilize distributed CP test processes and test architectures. Continue test case development and architecture set-up incorporating CP testing construct for the CE. ***FY 2017 Plans:*** Continue SWB2, SWB11-12, and COE v1.X and beyond test planning, test case development, test environment architecture set-up, to include information assurance software compliance, and software test tools. Continue to work to define CP specifications between CPs and testing methodology within CEs and between CEs as part of the Army transition to COE strategy, while working to incrementally implement and utilize distributed CP test processes and test architectures. Continue test case development and architecture set-up incorporating CP testing construct for the CE. Conduct COE v3.0 planning, test case development and architecture set-up incorporating CP testing construct for the CE.			
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. Develop/Maintain Applications for CTSF in-house programs. ***FY 2015 Accomplishments:*** Supported AIC Integration and Testing. Conducted Network Integration Checkout prior to each AIC. Continued support to PMs for integration of future COE insertions. Continued support to backward compatibility testing between CS11-12/COE v1.0. Continued to identify and incorporate software tools to monitor performance and assist in issue resolution. Integrated and implemented HBSS technology. Assisted PMs in the development of HBSS policies. Assisted in defining integration and test architectures to include Program of Record (POR) and non-POR radio communications devices to provide PMs and	0.481	0.145	0.139

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Material Developers testing in realistic environments. Provided CTSF network and systems engineering for validation of end-to-end sensor and platform communications and interoperability. Provided software patch validation; provided network support for integration and test floors; provided network support to fielded units upon request; provided systems engineering and analysis support to system of systems integration activities. Provided PMs and CTSF Configuration Management (CM) with a Virtualization Suite and assisted in virtualizing software. Assisted Assistant Secretary of the Army (Acquisition, Logistics, Technology) (ASA(ALT)) in developing Control Point Testing for COE v3.0 and distributed testing between the Computing Environments (CEs). Assisted ASA(ALT) in defining the COE architectures and services. Assisted in Joint/Coalition Interoperability issues for multiple Combatant Commands. Conducted Enhanced Position Location and Reporting System (EPLRS) firmware and EPLRS Network Manager (ENM) Verification and Validation.			
FY 2016 Plans: Support AIC Integration and Testing. Continue Network Integration Checkout prior to each AIC. Continue support to PMs for integration of future COE insertions and for COE V3.0 integration. Support to backward compatibility testing between CS11-12/ COE V1.0/COE V3.0. Identify and incorporate software tools to monitor performance and assist in issue resolution. Integrate and implement HBSS technology. Assist PMs in the development of HBSS policies. Assist integration and test architectures to include 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 and CTSF Configuration Management (CM) 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. Support Army Warfare Assessment (AWA), Joint Users Interoperability Communications Exercise (JUICE), and Bold Quest technology and interoperability demonstrations. Continue development and refinement of Control Point and distributed testing. Assist Assistant Secretary of the ASA(ALT) in developing and refining Control Point Testing for COE v3.0 and distributed testing between the CEs. Assist the CEs in Federation of Net-Centric Sites (FaNS) accreditation for distributed testing. Assist ASA(ALT) in defining the COE architectures and services. Assist in interoperability issues for multiple Combatant Commands. Conduct radio Verification and Validation.			
FY 2017 Plans: Support AIC Integration and Testing. Continue Network Integration Checkout prior to each AIC. Support to PMs for COE V3.0 and follow-on integration. Support to backward compatibility testing between CS11-12/COE V1.0/COE V3.0. Identify and incorporate software tools to monitor performance and assist in issue resolution. Integrate and implement HBSS technology. Assist PMs in the development of HBSS policies. Assist integration and test architectures to include 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			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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 and CTSF Configuration Management (CM) with a Virtualization Suite and assist in virtualizing software. Plan and conduct engineering evaluations for AIC testing and data collection in the NIE/CIE to leverage the operational environment and NIE/CIE resources. Support Army Warfare Assessment (AWA), Joint Users Interoperability Communications Exercise (JUICE), and Bold Quest technology and coalition interoperability demonstrations. Continue development and refinement of Control Point and distributed testing. Assist ASA(ALT) in developing and refining Control Point Testing for COE v3.0 and distributed testing between the CEs. Assist the CEs in FaNS accreditation for distributed testing. Assist ASA(ALT) in defining the COE architectures and services. Assist in coalition partner interoperability issues for multiple Combatant Commands. Conduct radio Verification and Validation.			
Title: Configuration Management	0.176	0.139	0.358
Description: As Army Configuration Management Office (ACMO), establish and maintain oversight control of the Army Master Library for the Army Interoperability Certified Fielded Baseline (AICFB). Archive system software and data products, correlated with their associated documentation, for the LandWarNet Mission Command Baseline (ALWNMCB), a subset of the AICFB. Establish and maintain the configuration and change management to the AICFB and the ALWNMCB for Lifecycle Software Management (LCSM). Provide support to the Army Staff (ARSTAF), Material Developers (MATDEV), Project Managers (PM), and System Owners (SO) through the orderly management of product configuration information and product change management (ChM), which enables capability revisions, improved reliability and maintainability, extended life, and reduced cost. Maintain and improve the Configuration Management Tracking System v3 (CMTSIII), the Army's authoritative database management system (DBMS) for configuration management (CM) of the systems comprising Coalition Interoperability Assurance and Validation (CIAV), and the Warfighter Mission and Business Mission Areas of the Army Information Technology (IT) portfolio. Assist the CIO/G6 in conducting accreditation inspections & training for Federation of Net-centric Sites (FaNS) locations.			
FY 2015 Accomplishments: Performed CM functional and physical configuration management and change management to the AICFB, to include archiving the required system software, data products and documentation, while correlating the relevant data within the CMTSIII DBMS for visibility to users Army wide. Provided baseline reconciliation to the four quarterly CIO/G6 AICFB reports, which identifies to commanders and their G-3/G-6 staff the Army's AIC certified, Interoperability Capability and Limitations assessed, AIC waivered, and AIC exempted system software that is authorized to connect to the Army's network. Performed formal inspection to the Program Executive Office Aviation FaNS location in support of CIO/G-6. Coordinated with CTSF Engineering Services to enhance the CMTSIII capabilities that provided services to CTSF Test & Evaluation (T&E) Management; added Test Incidence Report (TIR) Level 1 and Level 2 and Commander Reports; brought online the CMTSIII T&E Tool Suite consisting of six interoperable modules. Incorporated a CTSF Engineering Service Suite consisting of three interoperable modules within CMTSIII. Normalized data elements between the CMTSIII and the Army Portfolio Management System (APMS), in coordination with HQDA CIO/G-6			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Business Mission Area (BMA) Action Officer. Incorporated DA G-3/5/7 Army LandWarNet Mission Command Baseline and HQDA CIO/G-6 Army Interoperable Certified Fielded Baseline (AICFB) into the CMTSIII verification and validation process for the release of official baselines. Updated CMTSIII and added Observation Reporting (OR) to support ASA (ALT) Interoperability and Integration Evaluation (I2E), U.S. Army Coalition Interoperability Assurance & Validation (CIAV) Coalition Test and Evaluation Environment (CTE2) and Coalition Verification and Validation Environment (CV2E). Added U.S. Army CIAV capability and functionality to HQDA CIO/G-6 AICFB Change Management (ChM) module. Provided Configuration Management Tracking System III (CMTSIII) DBMS user training for newly assigned personnel.			
FY 2016 Plans: Provide CM functional and physical configuration management and change management to the AICFB, to include archiving the required system software, data products and documentation, while correlating the relevant data within the CMTSIII DBMS for visibility to users Army wide. Provided baseline reconciliation to the four quarterly CIO/G6 AICFB reports, which identifies to commanders and their G-3/G-6 staff the Army's AIC certified, Interoperability Capability and Limitations assessed, AIC waivered, and AIC exempted system software that is authorized to connect to the Army's network. Assist the CIO/G6 in conducting accreditation inspections & training for Federation of net-centric Sites (FaNS) locations. Improve CMTSIII functionality by Implementing parent—child relationships within CMTSIII Data Products and Data Sets, and developing authoritative reports of relationships. Perform data normalization within CMTSIII and incorporate the Family of Systems (FoS) into submissions and reporting functions. Build separate CMTSIII modules for enhanced traceability of ASA(ALT) Integration and Interoperability Events (I2E), Observation Reporting, and HQDA CIO/G-6 monitoring and reporting of CMTSIII AIC Events. Revamp/revise CMTSIII Cybersecurity Security module, incorporating new Network Vulnerability Assessment, Host Based System Security, Information Assurance Vulnerability Assessment, and internal CTSF requirements. Build CMTSIII Resource Management (RM) Module in support of CTSF RM.			
FY 2017 Plans: Provide CM functional and physical configuration management and change management to the AICFB, to include archiving the required system software, data products and documentation, while correlating the relevant data within the CMTSIII DBMS for visibility to users Army wide. Provided baseline reconciliation to the four quarterly CIO/G6 AICFB reports, which identifies to commanders and their G-3/G-6 staff the Army's AIC certified, Interoperability Capability and Limitations assessed, AIC waivered, and AIC exempted system software that is authorized to connect to the Army's network. Assist the CIO/G6 in conducting accreditation inspections & training for Federation of net-centric Sites (FaNS) locations. Continue CMTSIII evolutionary developments: Streamline the Reproduction Distribution Installation Training (RDIT) support from four discrete modules into a single Software Management Module, adding capability and accountability. Automate the ASA (ALT) Configuration Control Board slides and certification requirements into CMTSIII; expand reporting outputs. Collaborate to obtain system accreditation for, and implement, the Configuration Management Tracking System Virtual Console (CMTSVC). Initiate changes to enable CMTSIII to			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
maintain currency/compatibility with Common Operating Environment evolutionary developments. Define and establish the CM Continuity of Operations Plan (COOP) requirements.			
Title: Management Operations/Program Office ***Description:*** Provide management operations consisting of planning, programming and executing funds; planning and programming for required personnel; planning, programming and executing contracts supporting AIC testing processes; and identifying reimbursable tests and collecting/allocating appropriate funds. ***FY 2015 Accomplishments:*** Programmed and executed funds/manpower/contracting requirements; tracked testing schedule, prepared/coordinated/tracked reimbursements for tests (COE V1.0 Follow-On; CS 11-12 Bi-Annual testing events T11.12 and T11.13; Software Block 2 Bi-Annual testing events T2.17 and T2.19; Joint systems tests; and future systems test events). Provided field support coordination for unit training and exercises. Maintained facility and test infrastructure. ***FY 2016 Plans:*** Implement CMTSIII Resource Management Module and Reporting in programming and execution of funds/manpower/contracting requirements. Track testing schedules, prepare/coordinate/track reimbursements for tests [e.g. COE V1.X and Beyond tests and Bi-Annual Army Interoperability Certification (AIC) test events, CS 11-12 Tri-Annual AIC test events, SWB2 AIC test events, Joint, Coalition], and future systems test events. Provide field support coordination for unit training and exercises. Maintain facility and test infrastructure. ***FY 2017 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.	1.021	0.808	1.235
Accomplishments/Planned Programs Subtotals	7.874	3.203	2.617

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

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MITRE Corp	FFRDC	Engineering Services : Fort Hood, TX	16.873	0.305	Oct 2014	-		-		-		-	Continuing	Continuing	0
In-House	Allot	Engineering Services : Fort Hood, TX	2.372	0.176		-		-		-		-	Continuing	Continuing	0
		Subtotal	19.245	0.481		-		-		-		-	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CECOM Matrix	Allot	Program and Budget Analysis Support : Fort Hood, TX/ Aberdeen Proving Grounds, MD	3.554	0.180	Oct 2014	0.202		0.183	Oct 2016	-		0.183	Continuing	Continuing	Continuing
In-House Support	Allot	Management Operations, Logistics Support : Fort Hood, TX	8.568	0.814	Oct 2014	0.546		0.924	Oct 2016	-		0.924	Continuing	Continuing	Continuing
ISSA/Training/TDY	Allot	Site Support Activities : Fort Hood, TX	0.000	-		-		0.062	Oct 2016	-		0.062	Continuing	Continuing	Continuing
Supplies	C/UCA	Management Operations, Logistics Support : Fort Hood, TX	1.222	0.027		0.060		0.066	Oct 2016	-		0.066	Continuing	Continuing	Continuing
		Subtotal	13.344	1.021		0.808		1.235		-		1.235	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CECOM R2 3G	C/CPFF	Test, Configuration Management : Fort Hood, TX	6.544	2.703	Sep 2014	0.150		0.001	Sep 2016	-		0.001	Continuing	Continuing	Continuing
CECOM S3	C/CPFF	Facilities, Maintenance, Security : Fort Hood, TX	5.673	1.200	Mar 2015	0.150		0.358	Dec 2015	-		0.358	Continuing	Continuing	Continuing
ISSA	MIPR	Utilities & NEC Support : Fort Hood, TX	4.454	0.311		0.180		0.184	Oct 2016	-		0.184	Continuing	Continuing	Continuing
EPG Matrix	MIPR	Test : Fort Hood, TX	4.853	1.175	Oct 2014	1.116		0.155	Oct 2016	-		0.155	Continuing	Continuing	Continuing
In-House Support	Allot	Test : Fort Hood,TX	2.067	0.682	Oct 2014	0.695		0.684	Oct 2016	-		0.684	Continuing	Continuing	Continuing
Instrumentation	C/UCA	Test Equipment Infrastructure : Fort Hood, TX	1.587	0.301	Oct 2014	0.104		-		-		-	Continuing	Continuing	Continuing
		Subtotal	25.178	6.372		2.395		1.382		-		1.382	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	57.767	7.874		3.203		2.617		-		2.617	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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)*

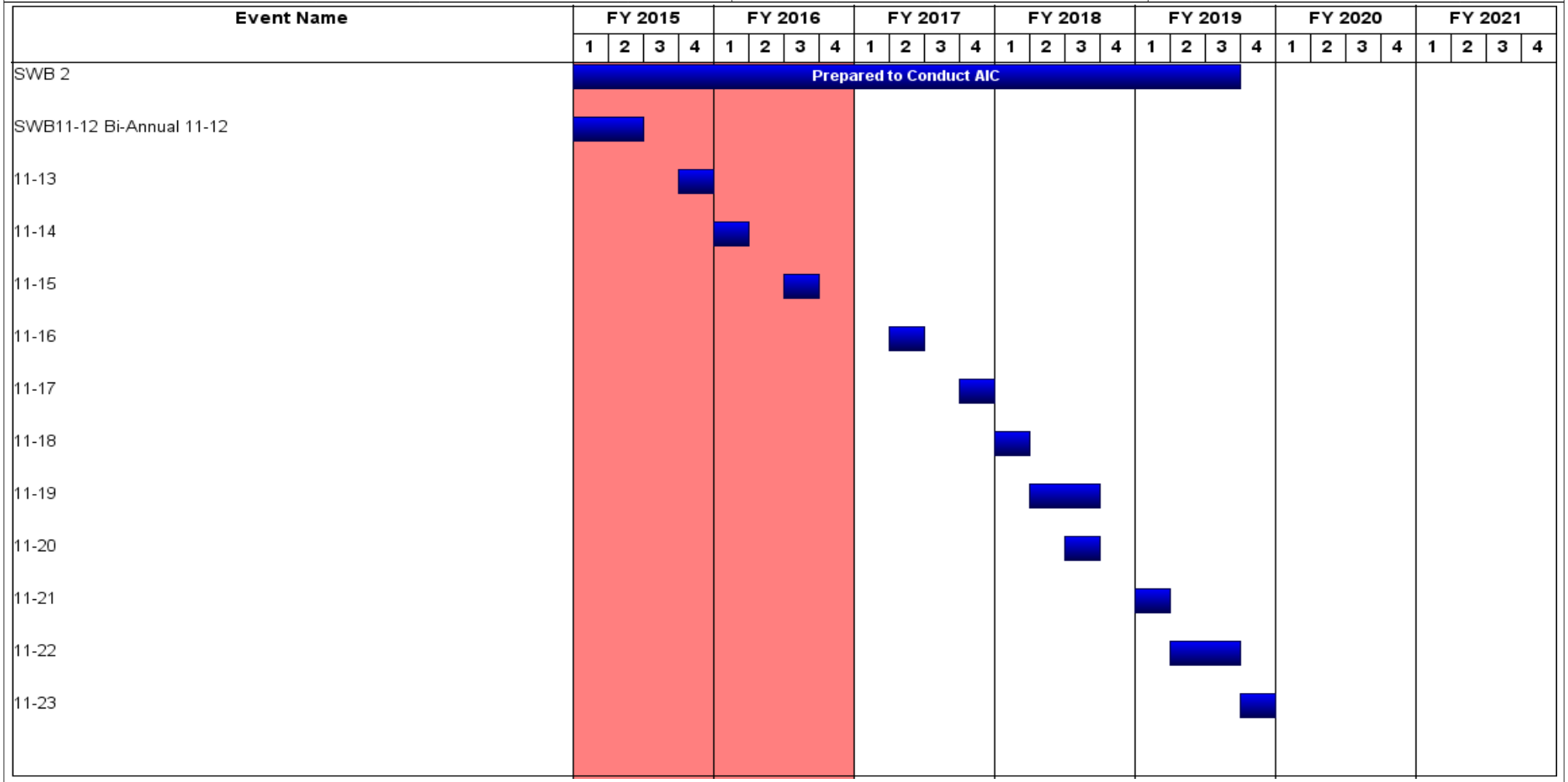

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

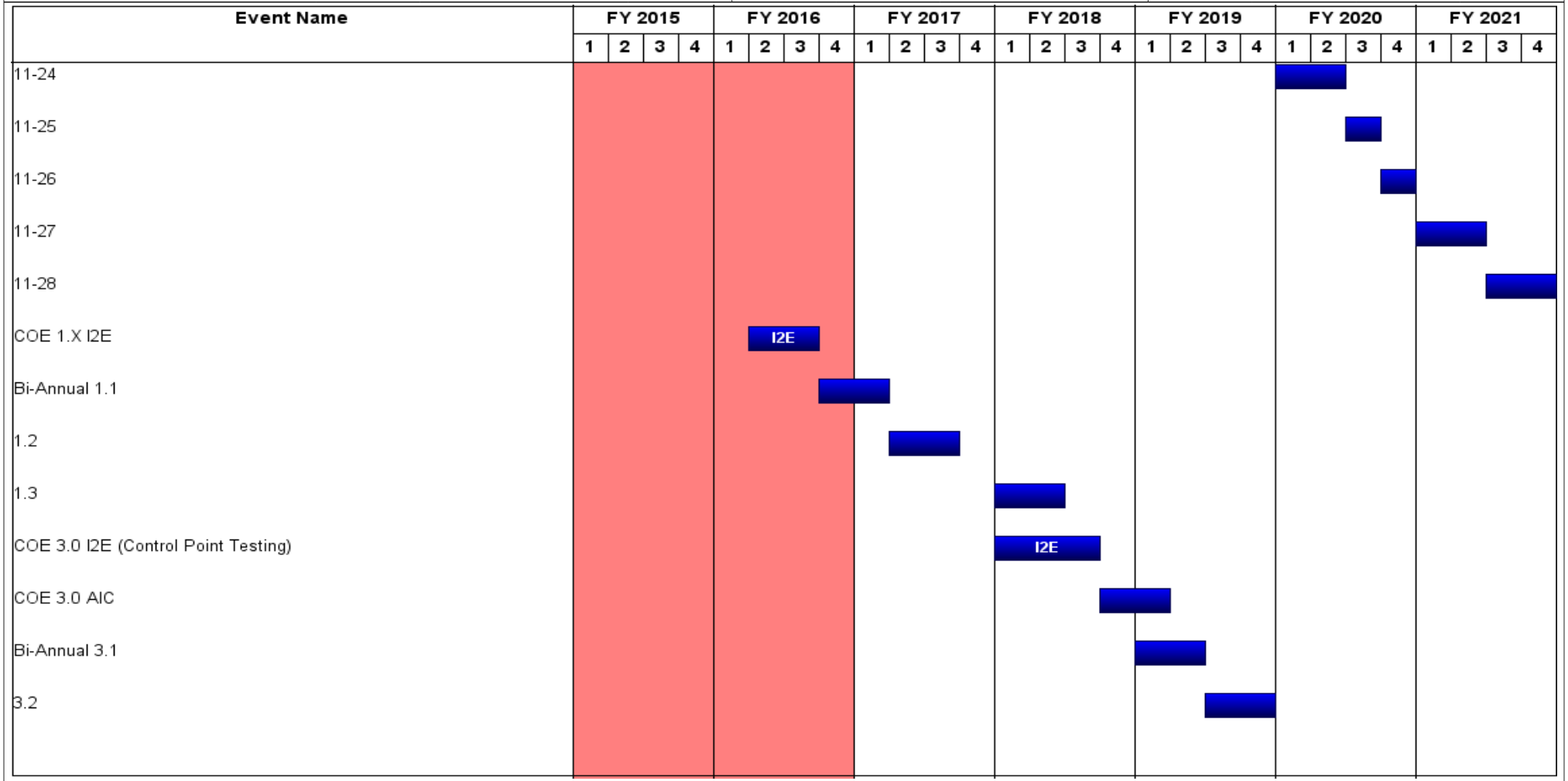

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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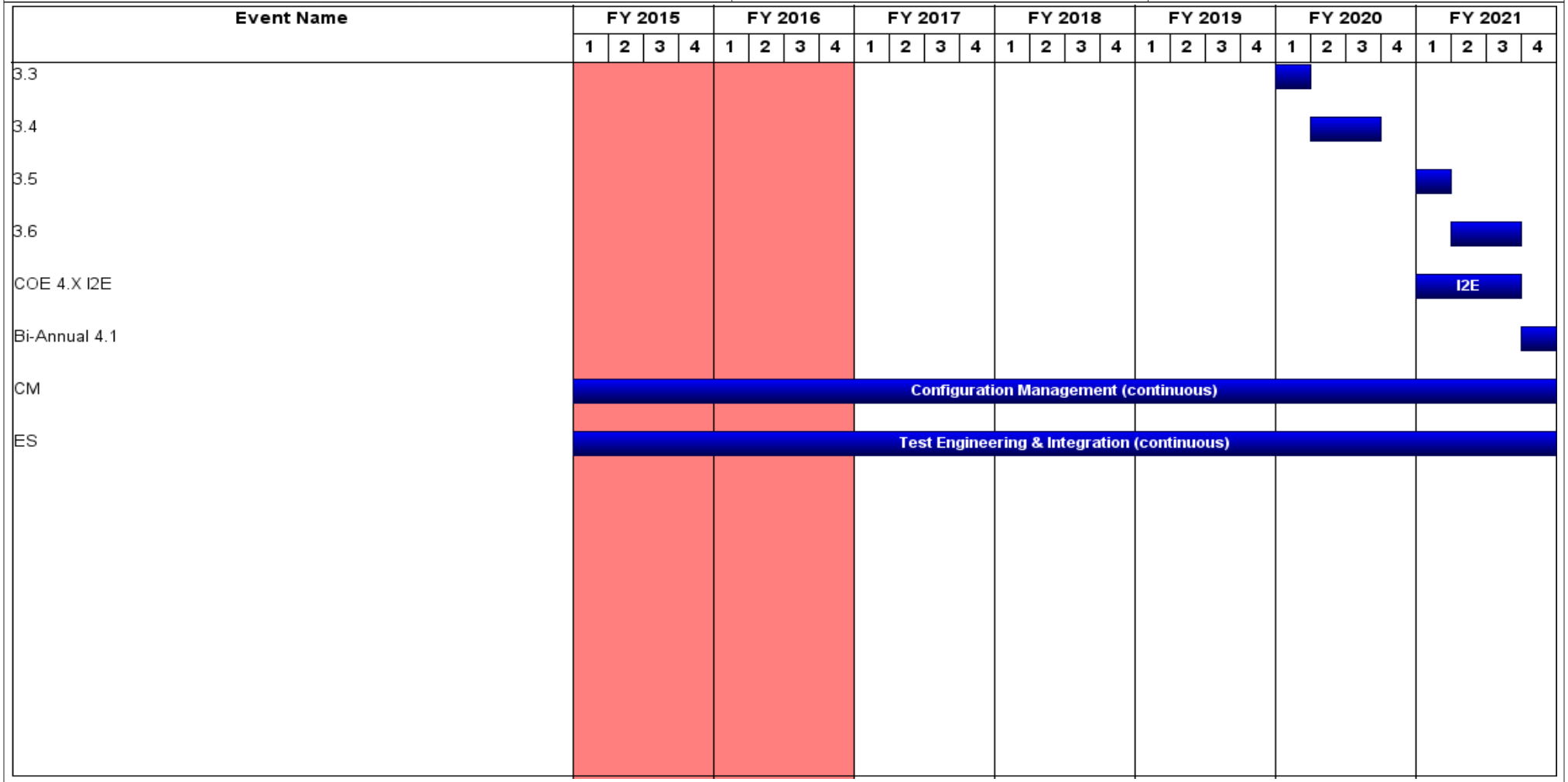

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SWB 2	1	2015	3	2019
SWB11-12 Bi-Annual 11-12	1	2015	2	2015
11-13	4	2015	4	2015
11-14	1	2016	1	2016
11-15	3	2016	3	2016
11-16	2	2017	2	2017
11-17	4	2017	4	2017
11-18	1	2018	1	2018
11-19	2	2018	3	2018
11-20	3	2018	3	2018
11-21	1	2019	1	2019
11-22	2	2019	3	2019
11-23	4	2019	4	2019
11-24	1	2020	2	2020
11-25	3	2020	3	2020
11-26	4	2020	4	2020
11-27	1	2021	2	2021
11-28	3	2021	4	2021
COE 1.X I2E	2	2016	3	2016
Bi-Annual 1.1	4	2016	1	2017
1.2	2	2017	3	2017
1.3	1	2018	2	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
COE 3.0 I2E (Control Point Testing)	1	2018	3	2018
COE 3.0 AIC	4	2018	1	2019
Bi-Annual 3.1	1	2019	2	2019
3.2	3	2019	4	2019
3.3	1	2020	1	2020
3.4	2	2020	3	2020
3.5	1	2021	1	2021
3.6	2	2021	3	2021
COE 4.X I2E	1	2021	3	2021
Bi-Annual 4.1	4	2021	4	2021
CM	2	2007	4	2022
ES	2	2007	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
C34: *Army Tac C2 Sys Eng*	-	9.168	8.842	8.881	-	8.881	9.094	9.151	9.259	9.497	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. Fiscal Year 2017 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 2015	FY 2016	FY 2017
Title: Continue Army Tactical Battle Command and Network Synchronization and Integration Support	0.141	0.136	0.137
Description: .			
FY 2015 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 2016 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 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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 2015	FY 2016	FY 2017
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 2015 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 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. ***FY 2017 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.	1.372	1.324	1.329
Title: Continue Tactical Network Engineering ***Description:*** . ***FY 2015 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 2016 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 2017 Plans:***	0.787	0.759	0.762

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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 2015 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 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. ***FY 2017 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.	1.767	1.704	1.711
Title: Continue Development and Implementation of Tactical Information Assurance (IA) ***Description:*** . ***FY 2015 Accomplishments:*** 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. ***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	0.267	0.257	0.259

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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 2017 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 2015 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 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. ***FY 2017 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.	3.145	3.033	3.047
Title: System of Systems (SoS) Engineering and Integration Evolution of the Network ***Description:*** . ***FY 2015 Accomplishments:*** 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:***	1.689	1.629	1.636

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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 2017 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	9.168	8.842	8.881

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Emerging Technologies	SS/FP	CACI : Aberdeen Proving Ground, MD	21.092	-		-		-		-		-	0	21.092	0
Emerging Technologies	SS/FP	Southwest Research Installation : Aberdeen Proving Ground, MD	0.175	-		-		-		-		-	0	0.175	0
System Of System Engineering and Integration, Current and Strategic Initiatives	C/T&M	CSC Aberdeen Proving Ground /Fort Hood, TX : APG	57.690	-		-		-		-		-	0	57.690	0
System of System Engineering & Integration, Current & Strategic Initiative, Architecture Integration	SS/CPFF	Bowhead : Aberdeen Proving Ground, MD	3.412	2.674		2.566		2.577		-		2.577	Continuing	Continuing	Continuing
Architecture Integration	C/T&M	CSC : various	9.005	-		-		-		-		-	0	9.005	0
Systems Engineering Support	SS/FP	LOCKHEED MARTIN : Eatontown, NJ	7.799	-		-		-		-		-	0	7.799	0
Systems Engineering Support	C/CPFF	Northrop Grumman : Arlington, VA	5.282	-		-		-		-		-	0	5.282	0
Systems Engineering Support	C/CPFF	TBD- Various : tbd	1.786	0.917		0.372		0.374		-		0.374	0	3.449	0
System of System Architectures, Engineering, and Integration	SS/FP	MITRE : Aberdeen Proving Ground, MD/ Eatontown, NJ	84.123	2.706		4.340		4.359		-		4.359	Continuing	Continuing	Continuing
Tactical Network Initialization	SS/FP	Future Skys Inc. : Neptune, NJ	0.600	-		-		-		-		-	0	0.600	0
System of System Engineering and Integration	C/T&M	CSC : Huntsville, AL	0.000	0.183		-		-		-		-	0	0.183	0
System of System Engineering and Integration	C/T&M	Viatech : NJ	0.000	0.367		-		-		-		-	0	0.367	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	190.964	6.847		7.278		7.310		-		7.310	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IN-HOUSE SUPPORT	Various	PEO C3T : APG, MD	28.687	1.839		1.125		1.130		-		1.130	Continuing	Continuing	Continuing
MATRIX	Various	Various : Aberdeen Proving Ground, MD	11.890	0.482		0.439		0.441		-		0.441	Continuing	Continuing	Continuing
OTHER GOVERNMENT SUPPORT	Various	Various : Various	7.377	-		-		-		-		-	0	7.377	0
		Subtotal	47.954	2.321		1.564		1.571		-		1.571	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	238.918	9.168		8.842		8.881		-		8.881	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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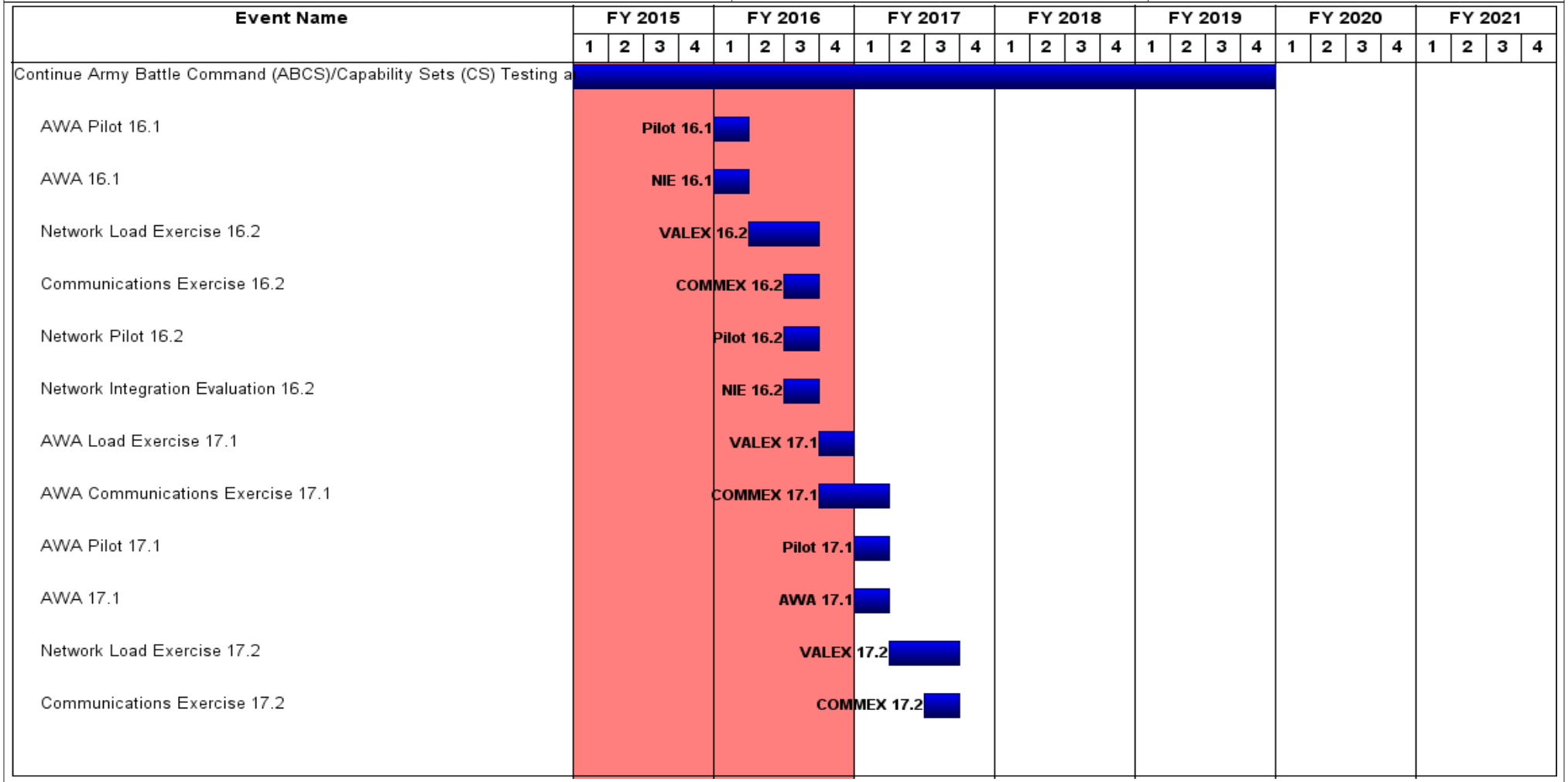

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Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

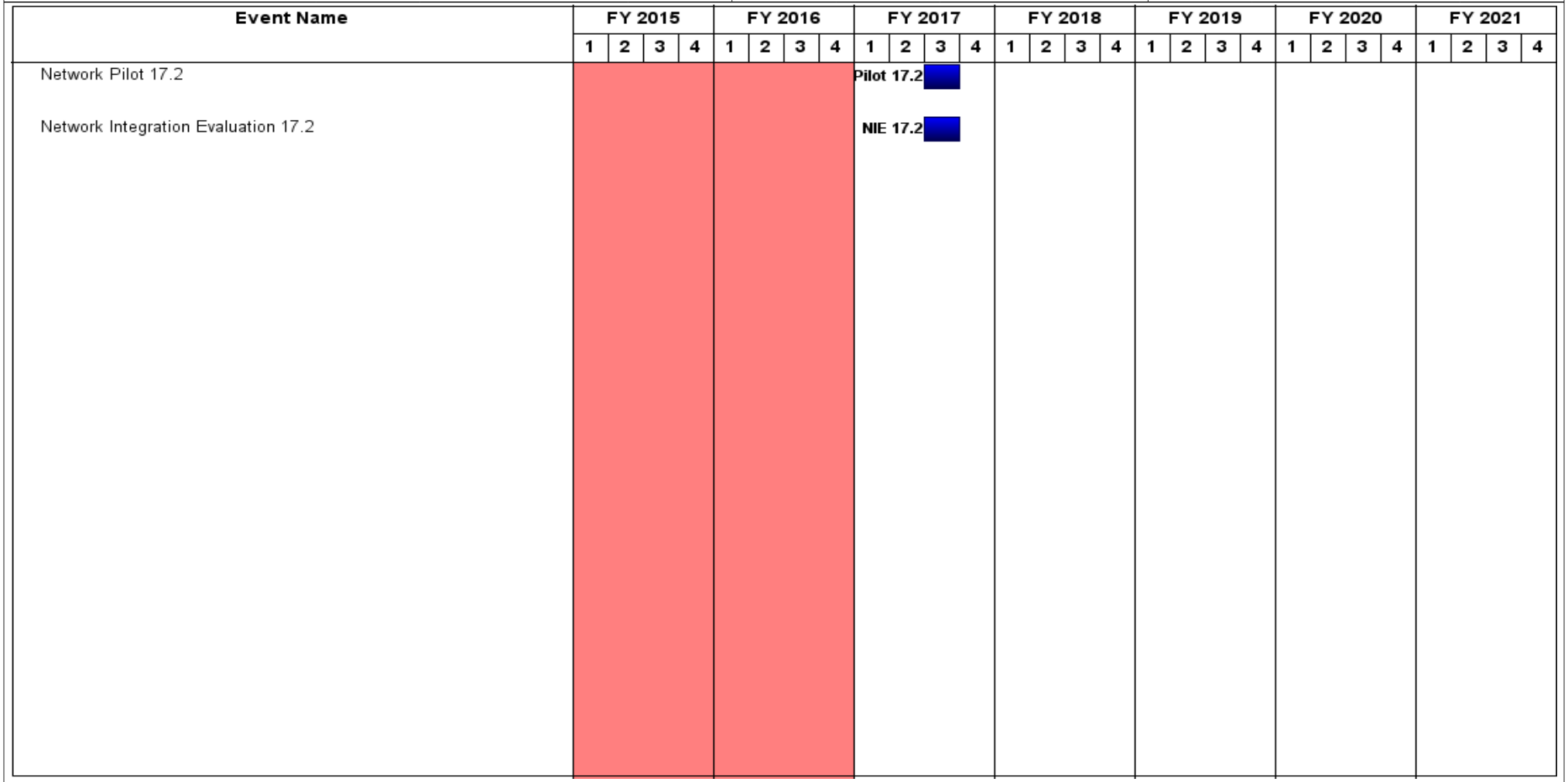

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Continue Army Battle Command (ABCS)/Capability Sets (CS) Testing and Eval	1	2008	4	2019
AWA Pilot 16.1	1	2016	1	2016
AWA 16.1	1	2016	1	2016
Network Load Exercise 16.2	2	2016	3	2016
Communications Exercise 16.2	3	2016	3	2016
Network Pilot 16.2	3	2016	3	2016
Network Integration Evaluation 16.2	3	2016	3	2016
AWA Load Exercise 17.1	4	2016	4	2016
AWA Communications Exercise 17.1	4	2016	1	2017
AWA Pilot 17.1	1	2017	1	2017
AWA 17.1	1	2017	1	2017
Network Load Exercise 17.2	2	2017	3	2017
Communications Exercise 17.2	3	2017	3	2017
Network Pilot 17.2	3	2017	3	2017
Network Integration Evaluation 17.2	3	2017	3	2017

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EJ4: *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	-	0.000	70.483	82.091	-	82.091	98.078	63.689	5.906	15.004	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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 2015	FY 2016	FY 2017
Title: SW Dev - Infrastructure (Collaboration)	-	17.040	13.995
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:*** Conduct the common architecting and design of initial collaboration in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of collaboration.			
Title: SW Dev - Infrastructure (Display/Share Relevant Tactical Information)	-	1.830	2.486

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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:*** Conduct the common architecting and design of initial Display/Share Relevant Tactical Information in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Display/Share Relevant Tactical Information.			
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:*** Conduct the common architecting and design of initial Command and Control on the Move in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Command and Control on the Move.	-	0.470	1.737
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:*** Conduct the common architecting and design of initial Application Marketplace in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Application Marketplace.	-	1.570	2.905
Title: SW Dev - Infrastructure (Training Support)	-	0.630	1.260

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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:*** Conduct the common architecting and design of initial Training Support in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Training Support.			
Title: SW Dev - Infrastructure (Joint & Coalition 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. ***FY 2016 Plans:*** Conduct the common architecting and design of initial JIIM Interoperability in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of JIIM Interoperability.	-	11.250	8.027
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. ***FY 2016 Plans:*** Conduct the common architecting and design of initial Execute Running Estimates in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Execute Running Estimates.	-	0.830	0.300
Title: SW Dev - Infrastructure (Unified Data Synch) ***Description:*** As part of Command Post Infrastructure Services; Provides 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.	-	3.300	5.980

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2016 Plans: Conduct the common architecting and design of initial Unified Data Synch in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Unified Data Synch.			
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. ***FY 2016 Plans:*** Conduct the common architecting and design of initial Create/Communicate/Rehearse Orders in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Create/ Communicate/Rehearse Orders.	-	3.360	2.316
Title: SW Dev - Infrastructure (Execute Tactical NetOps) ***Description:*** Improved Tactical NetOps increases deployment flexibility, simplifies application management processes, and improves application & network defenses on NIPR, SIPR, and MPE security domains. Tactical NetOps ensures distributed network control and facilitated net-centric sharing of network configuration, status, security, performance, utilization, and mission impact data for authorized users. ***FY 2016 Plans:*** Conduct the common architecting and design of initial Execute Tactical NetOps in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Execute Tactical NetOps.	-	1.150	3.768
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. ***FY 2016 Plans:***	-	5.500	3.294

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Conduct the common architecting and design of initial Quality of Service in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of 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). ***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. 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). ***FY 2017 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.	-	2.711	17.167

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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 ***Description:*** Test and Evaluation efforts include the planning and conduct of Mission Command 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 Mission Command 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 Mission Command 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. ***FY 2017 Plans:*** Test software capability of the core Mission Command 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 Mission Command 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, Army Interoperability Certification (AIC) testing, and in FY 17 Operational Test (OT).	-	12.663	10.408
Title: Program Management ***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	-	8.179	8.448

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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. ***FY 2017 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 FY17 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	82.091

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Department of the Army, Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA/ALT) directed the migration to the Command Post Computing Environment (CPCE), one of the six Computing Environments within the Common Operating Environment (COE), in December 2011.

To meet the CPCE goals of a common infrastructure, services and data layers that all Warfighting Function application providers can leverage, PEO C3T and PEO IEW&S (as co-leads for CPCE) will architect, design, integrate, test and field the hardware, software, network solutions and capabilities required to meet the normalized requirements from the participating Programs of Record while maintaining compliance with COE standards and intent.

Efforts are being accomplished through a mixture of organic Government and industry partners. GOGO partners include the U.S. Army Armament Research, Development and Engineering Center (ARDEC) Weapons Software Engineering Center (WSEC), CECOM Software Engineering Center (SEC), Aviation and Missiles RDEC (AMRDEC) Software Engineering Directorate (SED) and Communications-Electronics Research, Development and Engineering Center (CERDEC) and are allocated efforts through individual Task Orders. Commercial suppliers are assigned efforts through GSA Mission Command Engineering Services vehicles and Multiple Award Task Order (MATO) contracts.

Hardware and core software and associated licenses to support converged system architecture is Commercial-off-the-Shelf (COTS) and procured through existing vehicles from Common Hardware Systems (CHS) and the Army Computer Hardware Enterprise Software and Solutions (CHESS).

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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CPCE is not a Program of Record (PoR).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total 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	2.250	Oct 2016	-		2.250	0	4.220	0
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	1.400	Oct 2016	-		1.400	0	3.370	0
PM Support (SETA Contractor)	C/CPFF	Multiple incl CSC and others : APG, MD	0.000	-		4.239	Dec 2015	4.798	Dec 2016	-		4.798	0	9.037	0
		Subtotal	0.000	-		8.179		8.448		-		8.448	0.000	16.627	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development - Infrastructure	Various	SW Dev Contractors and Multiple Matrix Orgs : Various Locations	0.000	-		46.930	Dec 2015	46.068	Dec 2016	-		46.068	0	92.998	0
Software Development - Applications	Various	SW Dev Contractors and Multiple Matrix Orgs : Various Locations	0.000	-		2.711	Dec 2015	17.167	Dec 2016	-		17.167	0	19.878	0
		Subtotal	0.000	-		49.641		63.235		-		63.235	0.000	112.876	0.000

Remarks

Software Development efforts will be managed 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).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total 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	10.408	Dec 2016	-		10.408	0	23.071	0
		Subtotal	0.000	-		12.663		10.408		-		10.408	0.000	23.071	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		70.483		82.091		-		82.091	0.000	152.574	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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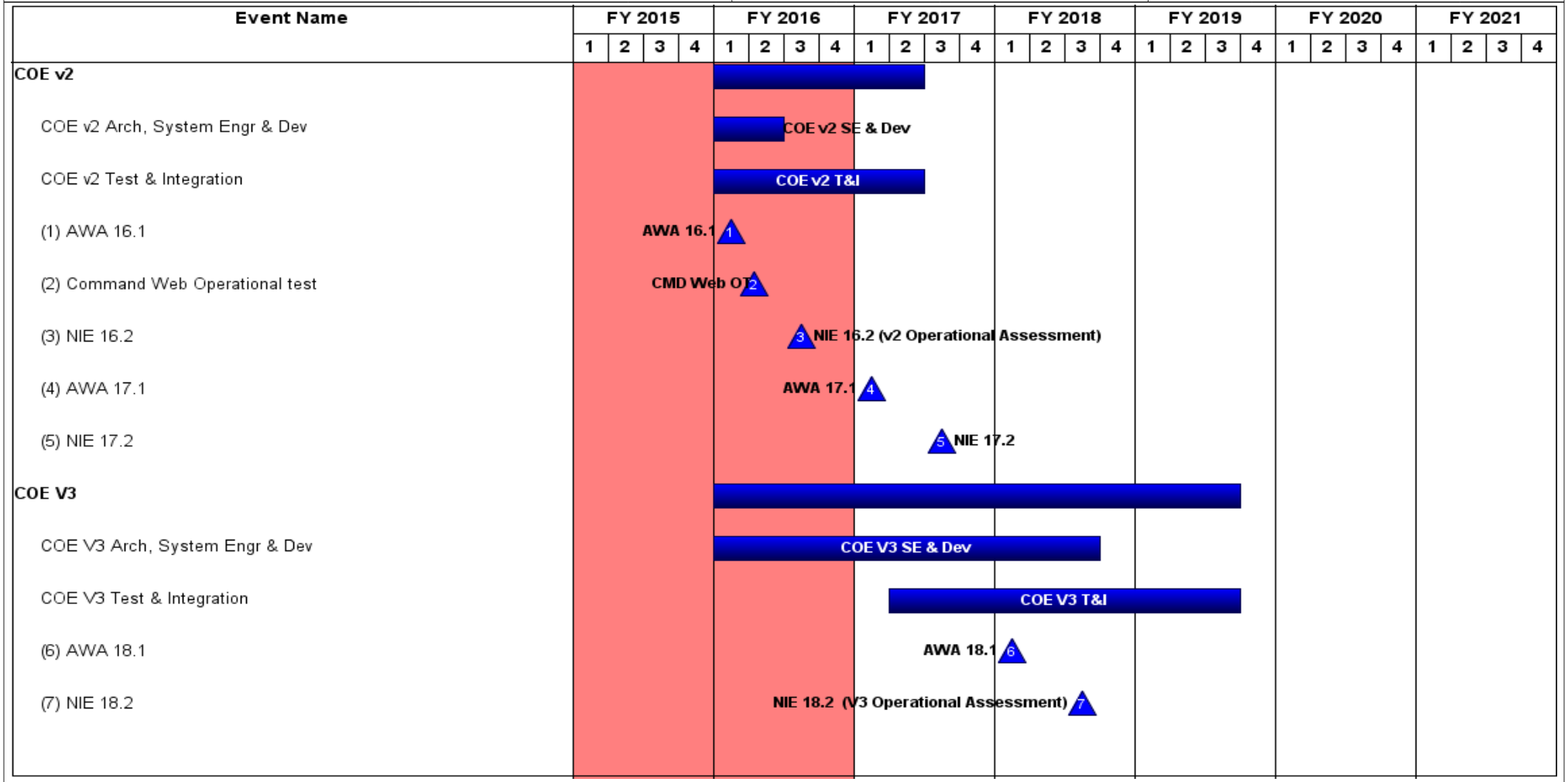

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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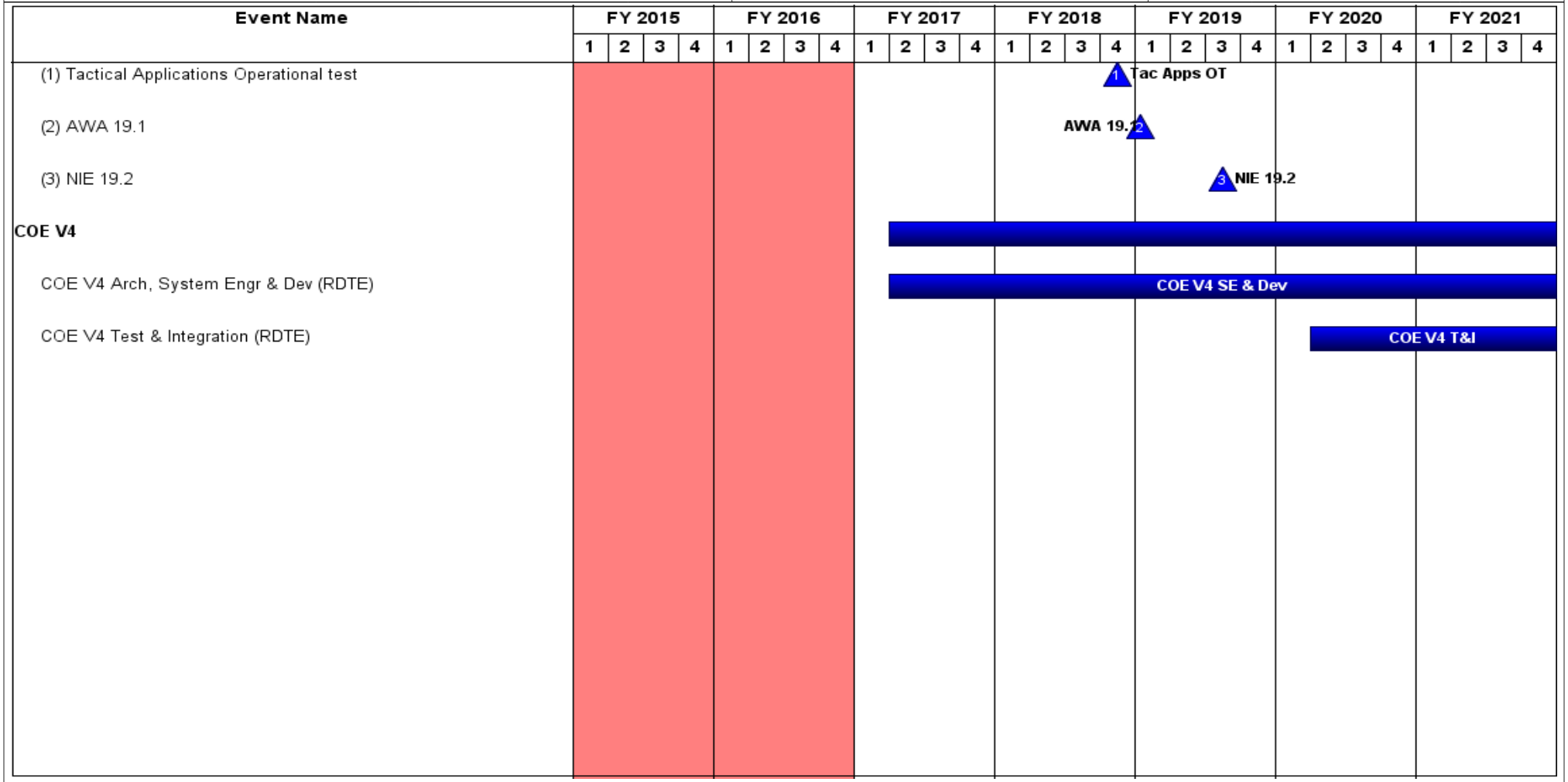

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
COE v2	1	2016	2	2017
COE v2 Arch, System Engr & Dev	1	2016	2	2016
COE v2 Test & Integration	1	2016	2	2017
AWA 16.1	1	2016	1	2016
Command Web Operational test	2	2016	2	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	2019
COE V3 Arch, 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
Tactical Applications Operational test	4	2018	4	2018
AWA 19.1	1	2019	1	2019
NIE 19.2	3	2019	3	2019
COE V4	2	2017	4	2021
COE V4 Arch, System Engr & Dev (RDTE)	2	2017	4	2021
COE V4 Test & Integration (RDTE)	2	2020	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EJ5: *MOUNTED COMPUTING ENVIRONMENT (MCE)*	-	0.000	12.370	15.271	-	15.271	18.606	16.814	7.668	8.683	0.000	79.412
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Mounted Computing Environment (MCE) efforts began under Proj/PE 0604805A/593 – Joint Battle Command – Platform (JBC-P), in support of the Common Operating Environment (COE) directive from the AAE to the Program Executive Offices, dated 20 December 2011. Effective FY2016, the Army established MCE, Proj/PE 604818.EJ5 as a separate funding line to segregate the costs of MCE from JBC-P.

A. Mission Description and Budget Item Justification

The COE is a set of standardized computing technologies that facilitates secure and interoperable applications to be rapidly developed and executed across a variety of computing environments. The MCE, one of the six computing environments (CEs) formalized by the AAE under the COE directive, standardizes end-user environments while enabling streamlined deployment of new warfighting applications.

The JBC-P is the foundational element and core software platform of the MCE. Development of the MCE continues 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 2017 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 aids in achieving CE and COE goals.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Software Development	-	3.711	4.458
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			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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). ***FY 2017 Plans:*** Begin the application of integrating mission command capabilities on the platform using the Hybrid Application Operating system. 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).			
Title: Software/Systems Engineering ***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, 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. ***FY 2017 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, 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.	-	4.701	5.803
Title: Test, Evaluation and Integration	-	2.474	3.178

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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. ***FY 2017 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.			
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 execution, contract management, and logistical support to MCE RDT&E activities, as well as participation in the overarching COE management infrastructure. ***FY 2017 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 execution, contract management, and logistical support to MCE RDT&E activities, as well as participation in the overarching COE management infrastructure.	-	1.484	1.832
Accomplishments/Planned Programs Subtotals	-	12.370	15.271

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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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 are 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 architects, designs, and develops the hardware, software, network solutions and capabilities required to achieve compliance with the COE. Primary systems architecture engineering is 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 are conducted by the CECOM Software Engineering Center (SEC) and the Aviation and Missiles RDEC (AMRDEC) Software Engineering Directorate (SED).

Test and Evaluation support is 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 is being conducted by the software development teams with Government oversight and coordination.

Hardware to support system architecture and software development is comprised of standardized equipment and is procured using existing contract vehicles such as the Mounted Family of Computer Systems (MFoCS).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total 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		1.832		-		1.832	0	3.316	0
		Subtotal	0.000	-		1.484		1.832		-		1.832	0.000	3.316	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total 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		4.458		-		4.458	0	8.169	0
Software/Systems Engineering	Various	PM Mission Cmd, Multiple Matrix Orgs and SW Dev Contractors : Aberdeen Proving Ground, MD	0.000	-		4.701		5.803		-		5.803	0	10.504	0
		Subtotal	0.000	-		8.412		10.261		-		10.261	0.000	18.673	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total 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		3.178		-		3.178	0	5.652	0
		Subtotal	0.000	-		2.474		3.178		-		3.178	0.000	5.652	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		12.370		15.271		-		15.271	0.000	27.641	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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)*

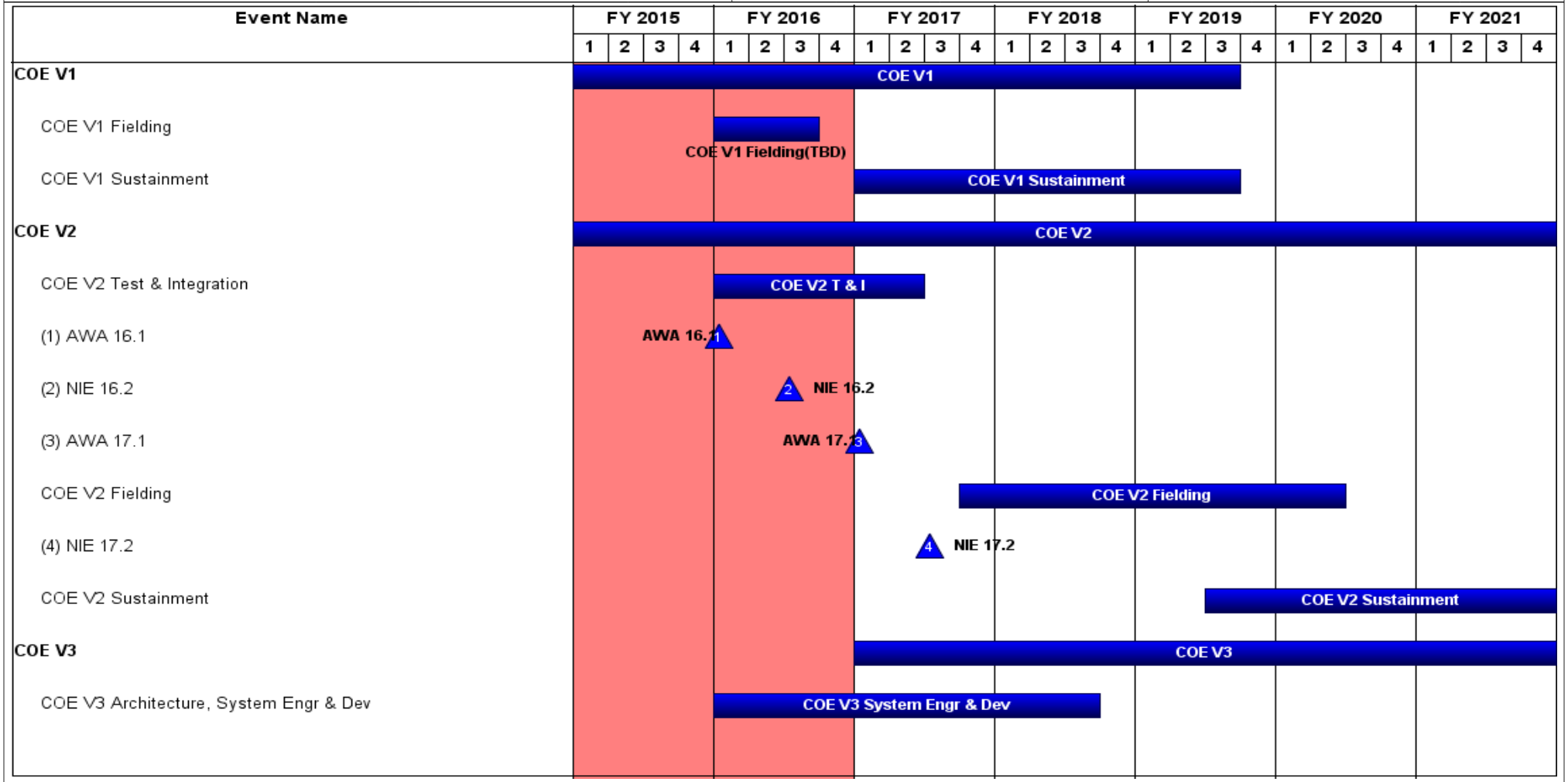

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

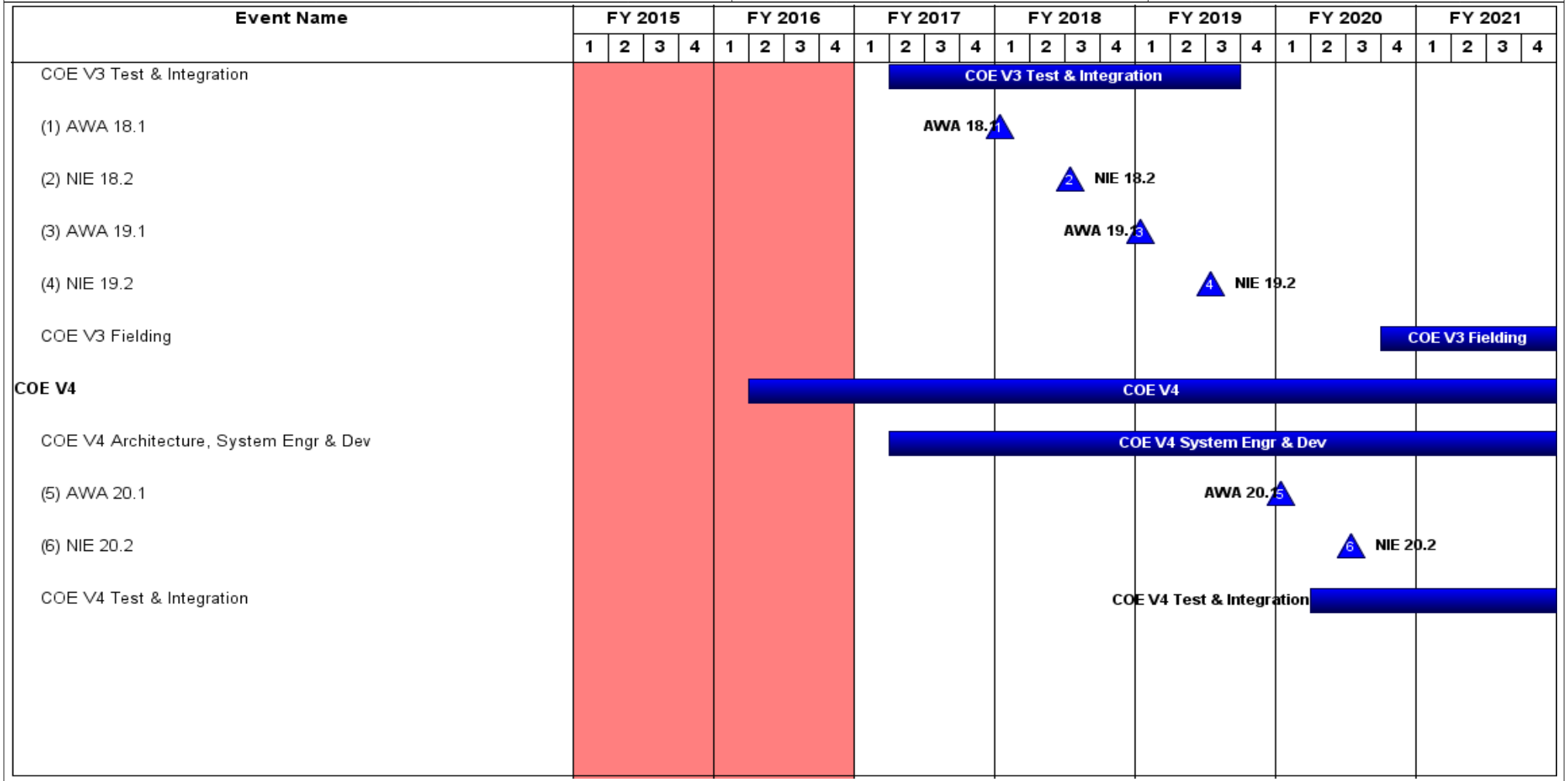

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

Schedule Details

	Start		End	
Events	**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	4	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	4	2020	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

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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

Note

MCE schedule represents the overarching COE Integrated Master Schedule. Each of the six computing environments follow the COE directed timelines.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EJ6: *TACTICAL ENHANCEMENT*	-	0.000	12.278	11.864	-	11.864	0.000	0.000	0.000	3.000	0.000	27.142
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Tactical Enhancement supports the evaluation and testing requirements for Modular Communications Node - Advanced Equipment (MCN-AE), Terrestrial Transmission (TRILOS) and Troposcatter (TROPO) capabilities procured and fielded under the Signal Modernization funding line, B00010. These systems will provide increased capabilities and improve intermodal and subscriber access communications links in the Warfighter Information Network-Tactical (WIN-T) network. It will also provide Top Secret transport convergence for Warfighter Information Network-Tactical units, augmenting legacy TROJAN Spirit terminals by providing a Top Secret Enclave through the WIN-T network.

FY17 funding will be used for Initial Operational Test & Evaluation (IOT&E) for TRILOS and System under Test (SUT) for MCN-AE during the scheduled Network Integration Evaluation (NIE) 17.2 event.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: System under Evaluation (SUE) for TS-SCI Security Enclave and TRILOS test support ***Description:*** Testing requirement ***FY 2016 Plans:*** BCT SUE for TS-SCI (NIE 16.2); TRLIOS testing support	-	12.278	-
Title: IOT&E for TRILOS systems and BCT SUT for TS-SCI ***Description:*** IOT&E for terrestrial communications TRILOS Systems ***FY 2017 Plans:*** IOT&E for terrestrial communications TRILOS Systems; BCT SUT for MCN-AE	-	-	11.864
Accomplishments/Planned Programs Subtotals	-	12.278	11.864

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• B00010: *Signal Modernization*	27.757	49.898	58.250	-	58.250	102.254	128.068	149.088	135.734	0.000	651.049

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

These funds will be used to conduct System Evaluation and Formal Testing of the various Signal Mod capabilities, specifically the MCN-AE, TROPO and Terrestrial Transmission (TRILOS) systems. This is in order to facilitate integration into the WIN-T tactical ground networks. Testing and evaluation efforts will leverage the upcoming Network Integration Evaluation (NIE) events, specifically NIE 16. 2 (MCN-AE), NIE 17.2 (TRILOS) and NIE 18.2 (TROPO) events. These test events will meet all mandatory testing requirements with full ATEC oversight. This Acquisition Strategy will integrate proven Commercial-Off-The-Shelf (COTS) capabilities into existing WIN-T nodes to expand and enhance network capacity and user access. The TROPO and TRILOS capabilities will be acquired as ACAT III programs to replace legacy equipment in the field while utilizing DoDI 5000.02 standard acquisition approaches, starting with Milestone C Determination for TRILOS (2QFY17) and TROPO (4QFY18).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	MIPR	ATEC : Aberdeen Proving Ground, MD	0.000	-		12.278		11.864		-		11.864	0	24.142	0
		Subtotal	0.000	-		12.278		11.864		-		11.864	0.000	24.142	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		12.278		11.864		-		11.864	0.000	24.142	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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*

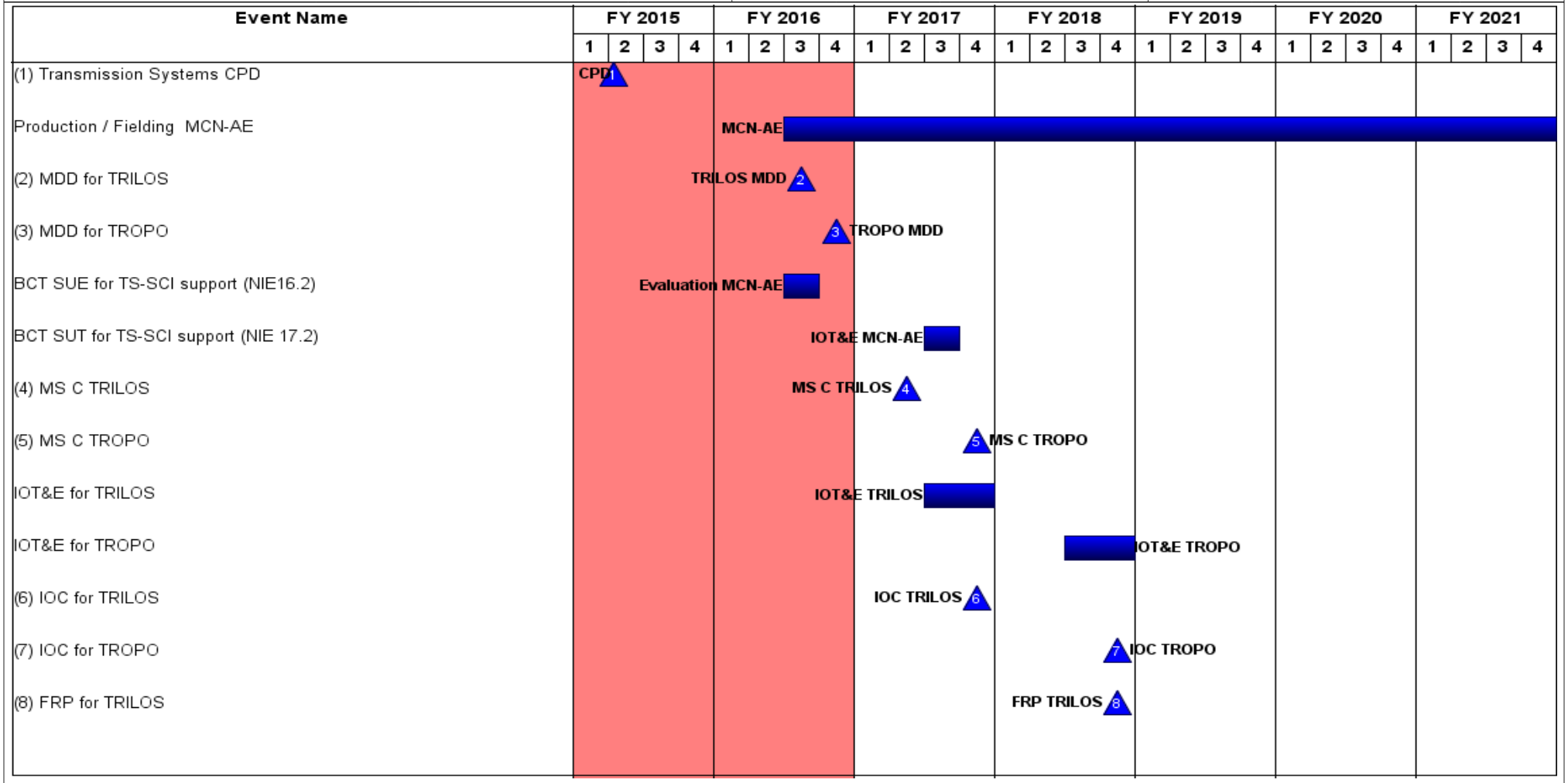

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

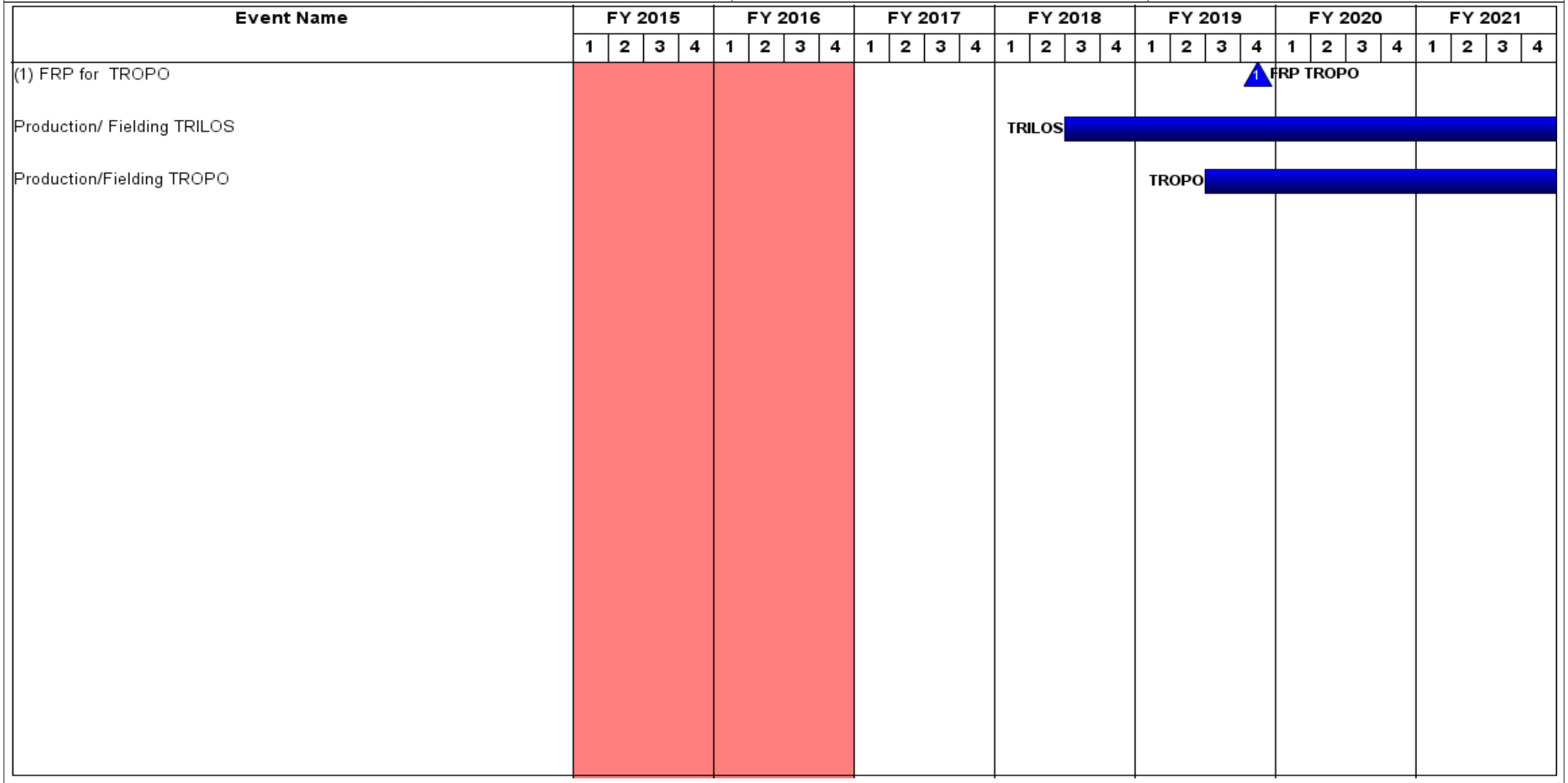

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Transmission Systems CPD	2	2015	2	2015
Production / Fielding MCN-AE	3	2016	4	2021
MDD for TRILOS	3	2016	3	2016
MDD for TROPO	4	2016	4	2016
BCT SUE for TS-SCI support (NIE16.2)	3	2016	3	2016
BCT SUT for TS-SCI support (NIE 17.2)	3	2017	3	2017
MS C TRILOS	2	2017	2	2017
MS C TROPO	4	2017	4	2017
IOT&E for TRILOS	3	2017	4	2017
IOT&E for TROPO	3	2018	4	2018
IOC for TRILOS	4	2017	4	2017
IOC for TROPO	4	2018	4	2018
FRP for TRILOS	4	2018	4	2018
FRP for TROPO	4	2019	4	2019
Production/ Fielding TRILOS	3	2018	4	2021
Production/Fielding TROPO	3	2019	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EJ7: *TACTICAL DIGITAL MEDIA*	-	0.000	1.300	2.467	-	2.467	0.000	0.000	0.000	0.000	0.000	3.767
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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 commercial off the shelf (COTS) which is currently in use by military organizations and commercial industry.

FY17 Base funding in the amount of $2.467 million will be used to procure and evaluate representative candidate COTS camera and video equipment for effectiveness, suitability, and reliability under combat conditions to support material solutions for procurement. FY17 efforts will also include planned full rate production decision, material release, and award of a production contract or task order to support future procurements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Program Management	-	0.154	0.295
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:*** Provide technical, logistics, 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. ***FY 2017 Plans:*** Provide technical, logistics, 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.			
Title: Test and Evaluation	-	1.146	1.431
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.			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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 2015	FY 2016	FY 2017
FY 2016 Plans: Photo, video, audio recording and editing equipment will be evaluated and tested in order to assess components of variant kits that support multiple mission requirements across multiple visual information (VI) disciplines. ***FY 2017 Plans:*** Photo, video, audio recording and editing equipment will be evaluated and tested in order to assess components of variant kits that support multiple mission requirements across multiple visual information (VI) disciplines.			
Title: Procurement of Test Articles ***Description:*** Photo, video, audio recording and editing equipment will be identified and procured in limited quantities for purposes of evaluation and testing in order to assess components of variant kits that support multiple mission requirements across multiple visual information (VI) disciplines. ***FY 2017 Plans:*** Test article procurement (limited quantities to support evaluation and testing).	-	-	0.741
Accomplishments/Planned Programs Subtotals	-	1.300	2.467

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• B68501 Tactical Digital Media (OPA): *B68501 Tactical Digital Media (OPA)*	-	-	1.191	-	1.191	4.441	4.958	5.055	5.156	0.000	20.801

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 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 equipment supporting acquire

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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*

and process operations that is centrally managed and resourced. New technologies and improvements of COTS 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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total 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		0.295		-		0.295	0	0.449	0
		Subtotal	0.000	-		0.154		0.295		-		0.295	0.000	0.449	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Articles	C/IDIQ	TBD (CHS, GTACS, or similar) : TBD	0.000	-		-		0.741		-		0.741	0	0.741	0
		Subtotal	0.000	-		-		0.741		-		0.741	0.000	0.741	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	IA	Multiple Govt Agencies : Locations TBD	0.000	-		1.146		1.431		-		1.431	0	2.577	0
		Subtotal	0.000	-		1.146		1.431		-		1.431	0.000	2.577	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		1.300		2.467		-		2.467	0.000	3.767	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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*

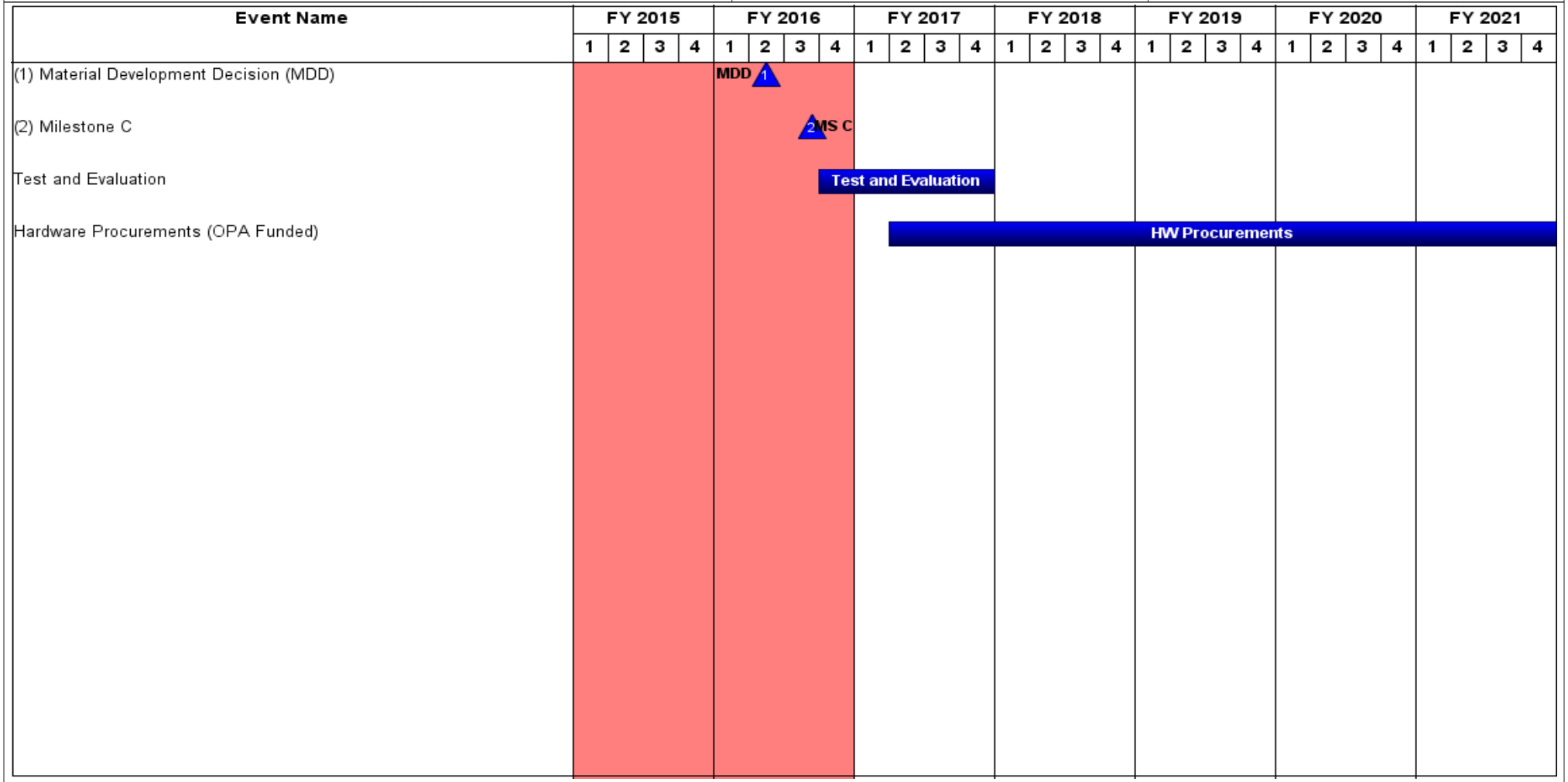

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ7 / *TACTICAL DIGITAL MEDIA*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Material Development Decision (MDD)	2	2016	2	2016
Milestone C	3	2016	3	2016
Test and Evaluation	4	2016	4	2017
Hardware Procurements (OPA Funded)	2	2017	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EK9: *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	-	0.000	0.000	39.264	-	39.264	66.588	68.751	69.129	70.755	0.000	314.487
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 DoD Information Network (DoDIN) functions into a single integrated set of Tactical NetOps and Management software. This integrated solution provides NetOps capability to manage Tactical Networks from the Soldier to the Theater network entry point and supports the implementation of the Integrated Tactical NetOps (ITNO) Increment 1 Capability Production Document (CPD). TNOM will deliver a standardized visualization capability (integrating both Upper and Lower Tactical Internet NetOps) in order to reduce complexity and inform the military decision making processes. TNOM will also provide enhanced capability to detect, respond, and restore from cyber incidents.

FY17 funding initiates the Engineering Design and Development of Network Operations software in support of the ITNO Increment 1 CPD, enhancing Network Visualization and Monitoring of the tactical network, standardizing data definition and storage to support Common Operational Picture, and simplify planning and configuration process for multiple network devices and radio. FY17 funding supports Test and Evaluation planning and updates to the Test and Evaluation Master Plan.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Product Development	-	-	30.895
Description: Network Operations Development ***FY 2017 Plans:*** FY17 initiates the Engineering Design and Development of Network Operations software in support of the Integrated Tactical Network Operations (ITNO) Increment 1 Capability Production Document which enhances Network Visualization and Monitoring of the tactical network, standardizes the data definitions and storage to support Common Operational Picture, and simplifies the planning and configuration process for multiple network devices and radios. FY17 will deliver high level design and specification documents that guide subsequent development and test planning.			
Title: Test and Evaluation	-	-	4.442
Description: Testing and Evaluating NetOps			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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 2015	FY 2016	FY 2017
FY 2017 Plans: FY17 funds T&E planning, updates to Test and Evaluation Master Plan, and integration and oversight by Government Test Organization with ongoing Contractor test events.			
Title: Management Services ***Description:*** Program Management Support ***FY 2017 Plans:*** Program Management Support and System Engineering for NetOps	-	-	3.927
Accomplishments/Planned Programs Subtotals	-	-	39.264

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Tactical Network Operations Management (TNOM) Increment 1, the first of multiple programs starting in FY17, is built to deliver the capabilities described in the Integrated Tactical Network Operations (ITNO) Increment 1 Capability Production Document (CPD). The ITNO CPD approval is expected in FY16. This effort picks up where individual programs have left off with Network Operations (NetOps) development, and integrates the various tools. The program also develops new tools in order to enhance the functionality while simplifying the user experience as a cohesive suite for the Signal and Cyber staff from Battalion through Corps. The program will utilize an Incrementally Deployed Software Intensive Program model (in accordance with Department of Defense Instruction 5000.02, Defense Acquisition Program Model 3) to rapidly develop and deliver capability to fielded units within existing network infrastructure. TNOM will enter at Milestone B, scheduled in early FY17. The program office conducted a Pre-Materiel Development Decision brief to Program Executive Office Command Control Communications Tactical in December 2015 and a Request for Information to Industry (RFI) in January 2016. The Program is on track for a Materiel Development Decision in 3rd Quarter 2016 to initiate the program with a Draft Request for Proposal release planned immediately thereafter. The Request for Proposal will be released upon CPD approval. TNOM will conduct a Milestone B decision in early FY17 immediately followed by a contract award. The program will develop and deliver capability in successive software builds, conduct developmental and operational tests, followed by Limited Fielding Decisions until full capability outlined in the ITNO CPD is delivered. The ITNO CPD outlines requirements for both new capability and integration of existing NetOps capabilities that will simplify Soldier interaction with the Network and provide enhanced ability to plan, configure, manage, monitor, control and secure/defend the tactical internet infrastructure. TNOM will integrate capabilities previously developed by WIN-T and the Joint Enterprise Network Manager (JENM), while aligning NetOps tools with the Common Operating Environment.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TNOM Program Management Support	C/TBD	Various : Various	0.000	-		-		3.927		-		3.927	0	3.927	0
		Subtotal	0.000	-		-		3.927		-		3.927	0.000	3.927	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TNOM Development	C/TBD	TBD : TBD	0.000	-		-		30.895		-		30.895	0	30.895	0
		Subtotal	0.000	-		-		30.895		-		30.895	0.000	30.895	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation Planning	C/TBD	Various : Various	0.000	-		-		4.442		-		4.442	0	4.442	0
		Subtotal	0.000	-		-		4.442		-		4.442	0.000	4.442	0.000

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		39.264		-		39.264	0.000	39.264	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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*

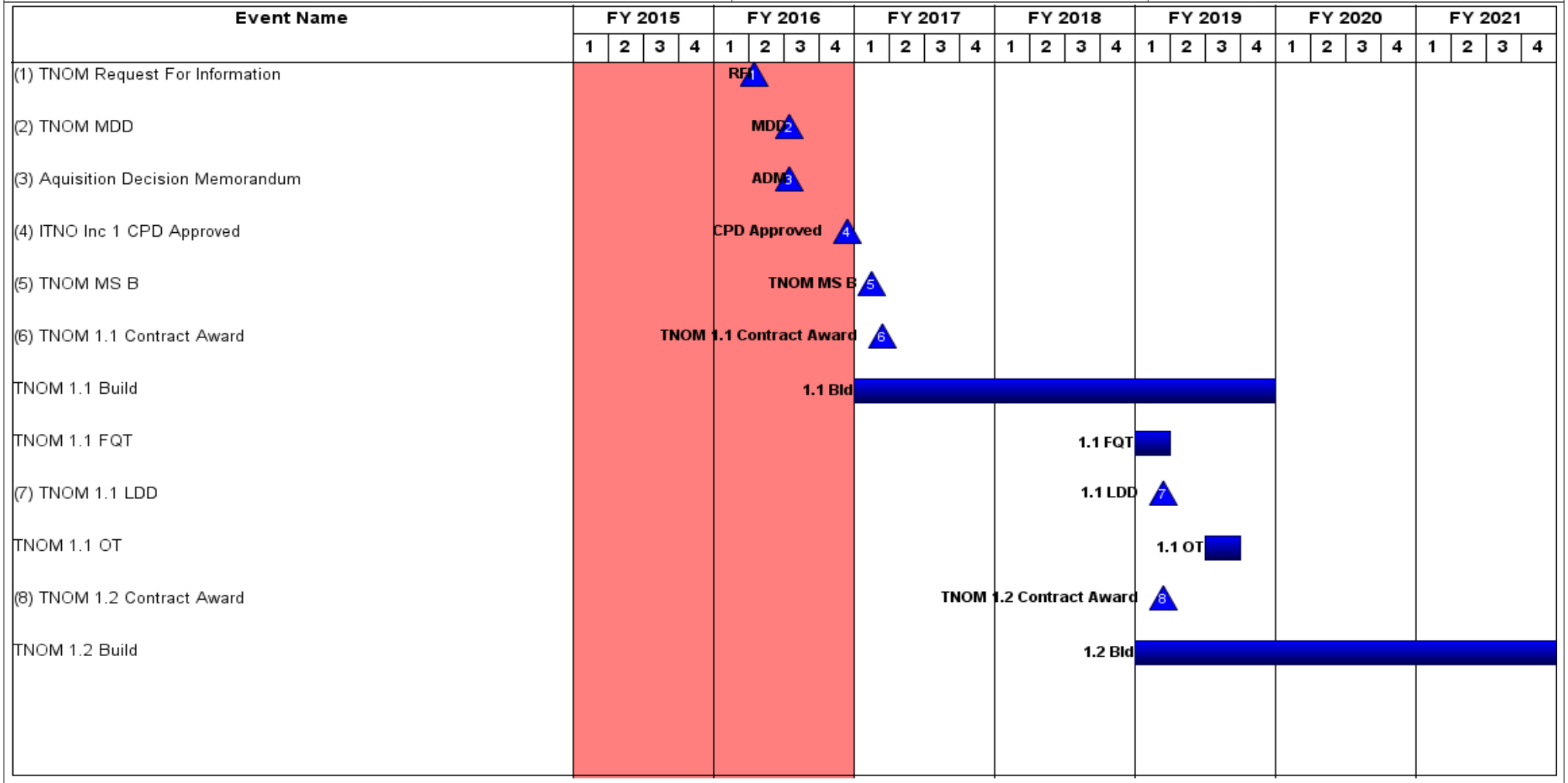

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
TNOM Request For Information	2	2016	2	2016
TNOM MDD	3	2016	3	2016
Aquisition Decision Memorandum	3	2016	3	2016
ITNO Inc 1 CPD Approved	4	2016	4	2016
TNOM MS B	1	2017	1	2017
TNOM 1.1 Contract Award	1	2017	1	2017
TNOM 1.1 Build	1	2017	4	2019
TNOM 1.1 FQT	1	2019	1	2019
TNOM 1.1 LDD	1	2019	1	2019
TNOM 1.1 OT	3	2019	3	2019
TNOM 1.2 Contract Award	1	2019	1	2019
TNOM 1.2 Build	1	2019	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EQ8: *Mobile/Handheld Computing Environment (M/HHCE)*	-	0.000	0.000	10.563	-	10.563	10.822	10.898	11.068	11.352	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Nett Warrior (NW) Program (named in honor of Medal of Honor recipient Colonel Robert C. Nett), also known as the Ground Soldier System (GSS) Program, leverages commercial smart devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations. The NW system provides leaders electronic real-time information on friendly positions; information about enemy activity and movement; navigational data and map imagery; a collaborative planning tool; and other mission related graphics which effectively puts the power of the entire Army tactical network in the hands of the dismounted leader. The NW system also provides the same integrated mission command capability to the tactical vehicle-mounted leaders so that when dismounted, the leader still maintains the common operating picture (COP) and has continuous situational awareness. This capability provides unparalleled situational awareness and enhanced communications to the dismounted leader allowing for faster, more accurate decisions and reduced fratricide in the tactical fight. Includes integration and interface of products on Soldiers.

The continued development and integration of the NW program also integrates applications from other programs aimed at considerably reducing the weight and bulk of the dismounted Soldier's load by using a single End User Device. The NW program harnesses Soldiers' experience in combat operations and employs combat veterans for Soldier feedback enhancing human factors design and fightability of the system. This project funds the following: 1) Incorporation of additional new hardware applications and capabilities into Nett Warrior, 2) Yearly developmental and operational tests of the NW with continually advancing commercial smart device technology inserted, 3) Software development for planned updates, 4) Integration of new End User Devices with the existing and re-competed Army Tactical Radios, including vehicle power integration, 5) Government led integration and system engineering and program management, and 6) Conduct NW Operational Test and Evaluation with Mechanized and Infantry units in FY16/17.

Note: FY16 and prior funding for Nett Warrior resided in 0604827A (Soldier Systems - Warrior Dem/Val) Project S75 (Ground Soldier Ensemble).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Test and Evaluation	-	-	2.119
Description: Test and Evaluation including twice a year Network Integration Evaluation (NIE) and Army Warfighting Assessment (AWA) to gain Soldier feedback.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Conduct NW test and 3rd party applications evaluation for technical verification at developmental test events and user verification through a planned Follow-on Test and Evaluation (FOT&E) operational assessment to support FY17 Full Rate Production (FRP) decision. Support NW as a baseline NIE and AWA system including: Brigade level support, equipping, training, and spares for NW; conduct yearly Army Interoperability Certification; environmental testing; and Information Assurance penetration prevention testing for new commercial smart devices, software and accessories.			
Title: Hardware and Software Integration and Evaluation for Capability Improvements ***Description:*** Hardware and Software Integration and Evaluation for Capability Improvements ***FY 2017 Plans:*** Evolve the NW system architecture and evaluate next End User Devices (EUD) and associated hardware components to stay aligned with commercial and Army evolving requirements. Provide NW software / hardware updates to support incorporation of 3rd party applications onto NW EUD platform, Army Interoperability Certification (AIC) and cyber security testing.	-	-	4.323
Title: Software Development & Integration ***Description:*** Funding is provided for the following efforts. ***FY 2017 Plans:*** Add additional Variable Message Format (VMF) messages to NW software. Evaluate next generation NW map engine and Operating System (OS) trade studies. Initiate assured Position, Navigation and Timing (PNT) software development efforts with NW. Update NW Software Development Kit (SDK) with new functionality. Establish a full/open competitive source for NW software development and integration support team. Start incorporating the Army's Common Operating Environment (COE) 3.0 Cross-Cutting Capabilities into NW software.	-	-	1.333
Title: Conduct SEPM Support to NW ***Description:*** Conduct Systems Engineering and Program Management Support to Nett Warrior ***FY 2017 Plans:*** Conduct government systems engineering and program management support for NW program including documentation preparation for a planned Full Rate Production decision in FY17. Manage the integration of the latest commercial smart devices, software applications and technology for test and evaluation. Collect input from Soldiers at semi-annual NIE events that improve NW size, weight, power, fightability, safety and effectiveness via surveys and electronic data monitoring from Developmental and Operational Testing (DT/OT) events. Facilitates NW compliance to M/HH CE standards.	-	-	2.788
Accomplishments/Planned Programs Subtotals	-	-	10.563

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• RDT&E, PE 0604827A S75,: *Ground Soldier Ensemble*	5.055	12.431	-	-	-	-	-	-	-	0	17.486
• OPA 3, R80501: *OPA 3, R80501, Ground Soldier System*	71.761	49.798	32.814	-	32.814	36.553	36.886	37.833	37.926	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Nett Warrior (NW) program provides unparalleled situational awareness and mission command to dismounted combat leaders through a secure commercial smart device, power source, cables and tactical radio. The NW is focused on Team Leader and higher echelons and provides an integrated secure information-centric Commercial-Off-The Shelf (COTS) mobile application-based computation platform with data collection, enhanced SA, mission planning, and navigational aid functions overlaid on geo-referenced maps and high resolution imagery throughout a brigade. The NW enables real-time ground tactical-level knowledge sharing and command and control (C2), directly impacting combat effectiveness and decision-making. The NW also improves lower echelon intelligence production and analysis capabilities which are central to efficient and effective counter-insurgency warfare. NW program completed LRIP/MS C in 2012 followed by two LRIP decisions in 2013-14 in preparation for IOT&E under DOT&E oversight in 4QFY14-1QFY15. This IOT&E event lead to an additional NW Low Rate Initial Production (LRIP) decision in 2015 and a Full Rate Production Decision is planned for mid FY17. From this decision NW will complete annual production and fielding events based on yearly development, integration and testing of emerging advanced smart devices to lower cost, weigh and power. To capitalize on commercial industry's investment in advanced smart device technology as well as innovation and changes within Army, NW requires annual RDT&E funding for integration and evaluation. Through this process and at low cost, the Army is able to integrate and evaluate for combat utility the hundreds of millions spent in product development by the major commercial device manufactures.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering & Program Management Support	Various	Various : Various	0.000	-		-		2.787		-		2.787	Continuing	Continuing	0
		Subtotal	0.000	-		-		2.787		-		2.787	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware/Software Integration & Evaluation	Various	Various : Various	0.000	-		-		4.323		-		4.323	Continuing	Continuing	0
		Subtotal	0.000	-		-		4.323		-		4.323	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development and Integration	Various	Various : Various	0.000	-		-		1.334		-		1.334	Continuing	Continuing	0
		Subtotal	0.000	-		-		1.334		-		1.334	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various Testing Organizations	Various	Various : Various	0.000	-		-		2.119		-		2.119	Continuing	Continuing	0
		Subtotal	0.000	-		-		2.119		-		2.119	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		10.563		-		10.563	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

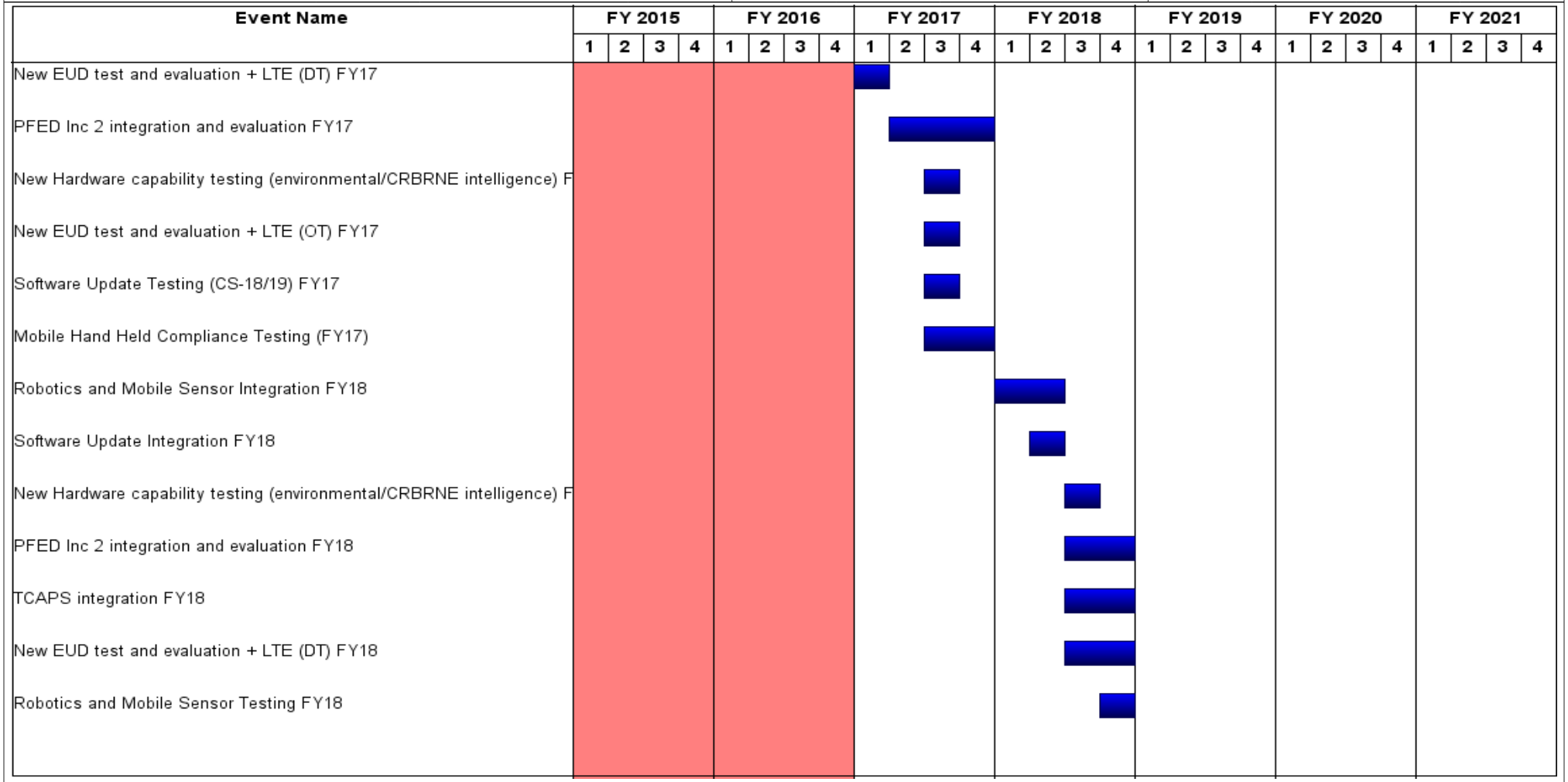

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

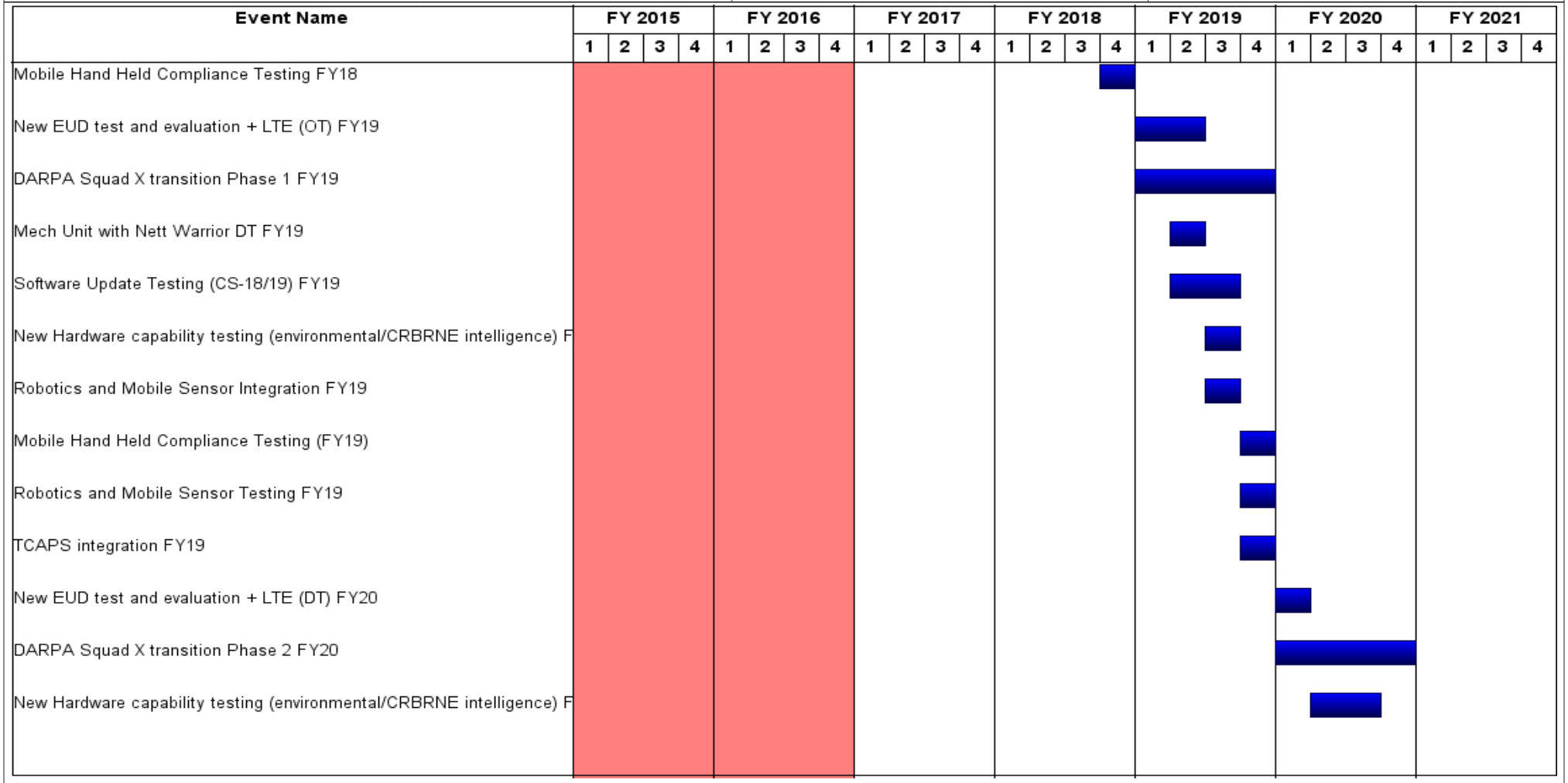

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

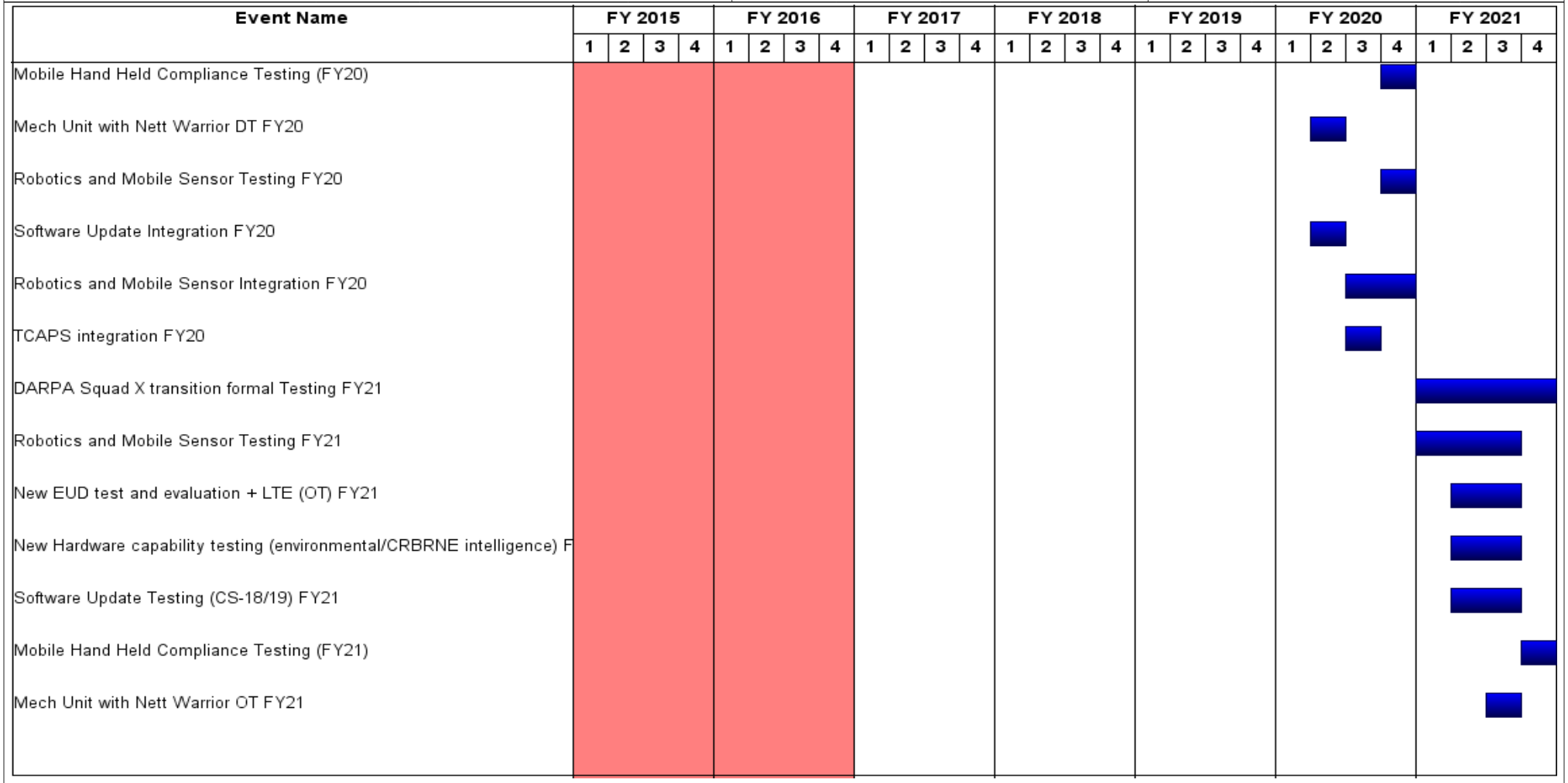

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

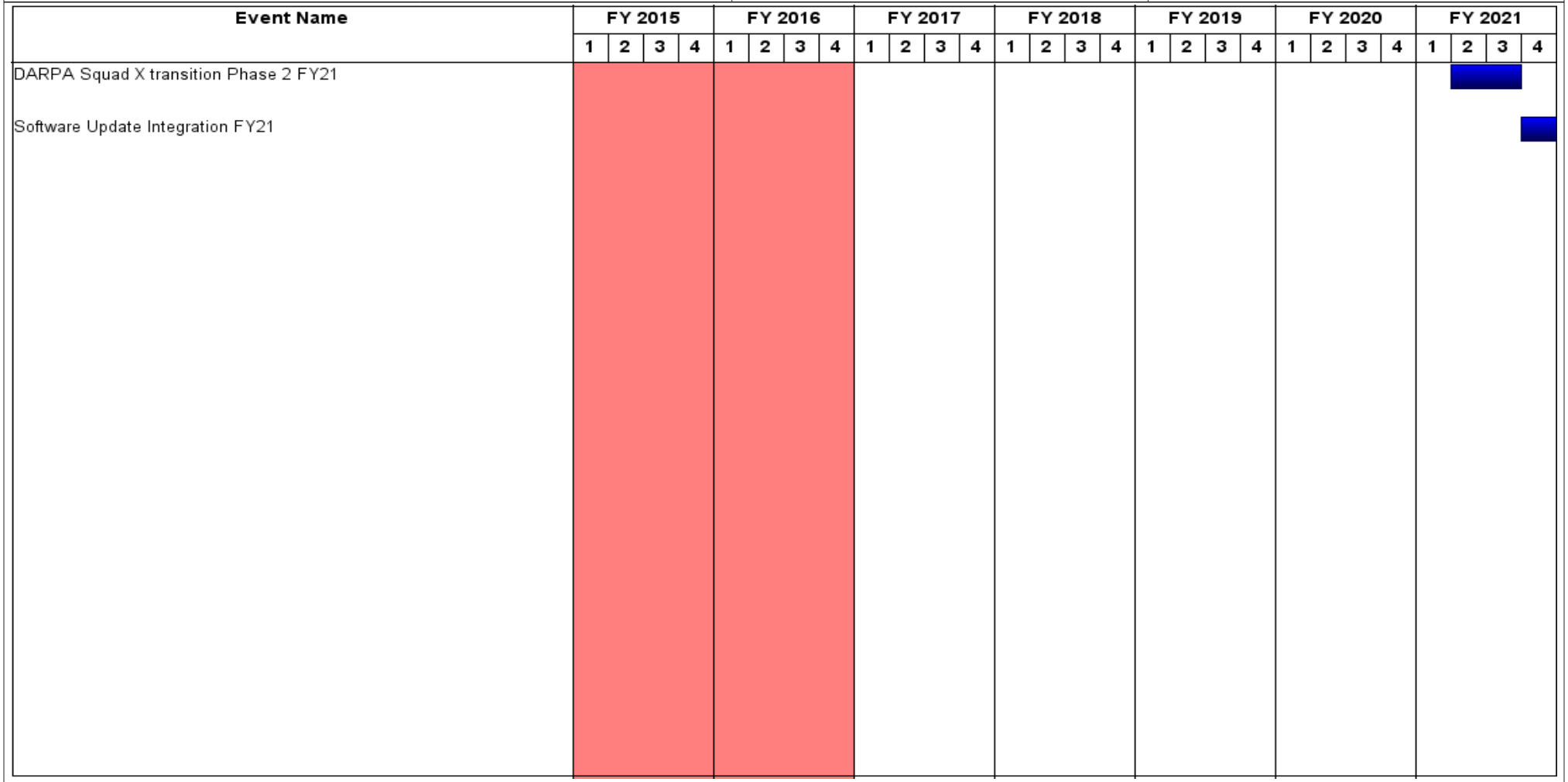

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
New EUD test and evaluation + LTE (DT) FY17	1	2017	1	2017
PFED Inc 2 integration and evaluation FY17	2	2017	4	2017
New Hardware capability testing (environmental/CRBRNE intelligence) FY17	3	2017	3	2017
New EUD test and evaluation + LTE (OT) FY17	3	2017	3	2017
Software Update Testing (CS-18/19) FY17	3	2017	3	2017
Mobile Hand Held Compliance Testing (FY17)	3	2017	4	2017
Robotics and Mobile Sensor Integration FY18	1	2018	2	2018
Software Update Integration FY18	2	2018	2	2018
New Hardware capability testing (environmental/CRBRNE intelligence) FY18	3	2018	3	2018
PFED Inc 2 integration and evaluation FY18	3	2018	4	2018
TCAPS integration FY18	3	2018	4	2018
New EUD test and evaluation + LTE (DT) FY18	3	2018	4	2018
Robotics and Mobile Sensor Testing FY18	4	2018	4	2018
Mobile Hand Held Compliance Testing FY18	4	2018	4	2018
New EUD test and evaluation + LTE (OT) FY19	1	2019	2	2019
DARPA Squad X transition Phase 1 FY19	1	2019	4	2019
Mech Unit with Nett Warrior DT FY19	2	2019	2	2019
Software Update Testing (CS-18/19) FY19	2	2019	3	2019
New Hardware capability testing (environmental/CRBRNE intelligence) FY19	3	2019	3	2019
Robotics and Mobile Sensor Integration FY19	3	2019	3	2019
Mobile Hand Held Compliance Testing (FY19)	4	2019	4	2019
Robotics and Mobile Sensor Testing FY19	4	2019	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
TCAPS integration FY19	4	2019	4	2019
New EUD test and evaluation + LTE (DT) FY20	1	2020	1	2020
DARPA Squad X transition Phase 2 FY20	1	2020	4	2020
New Hardware capability testing (environmental/CRBRNE intelligence) FY20	2	2020	3	2020
Mobile Hand Held Compliance Testing (FY20)	4	2020	4	2020
Mech Unit with Nett Warrior DT FY20	2	2020	2	2020
Robotics and Mobile Sensor Testing FY20	4	2020	4	2020
Software Update Integration FY20	2	2020	2	2020
Robotics and Mobile Sensor Integration FY20	3	2020	4	2020
TCAPS integration FY20	3	2020	3	2020
DARPA Squad X transition formal Testing FY21	1	2021	4	2021
Robotics and Mobile Sensor Testing FY21	1	2021	3	2021
New EUD test and evaluation + LTE (OT) FY21	2	2021	3	2021
New Hardware capability testing (environmental/CRBRNE intelligence) FY21	2	2021	3	2021
Software Update Testing (CS-18/19) FY21	2	2021	3	2021
Mobile Hand Held Compliance Testing (FY21)	4	2021	4	2021
Mech Unit with Nett Warrior OT FY21	3	2021	3	2021
DARPA Squad X transition Phase 2 FY21	2	2021	3	2021
Software Update Integration FY21	4	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EW3 / *Unit Task Reorganization (UTR) Development*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EW3: *Unit Task Reorganization (UTR) Development*	-	0.000	0.000	24.498	-	24.498	0.000	0.000	0.000	0.000	0.000	24.498
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

As the Army's tactical network continues to evolve from a loose federation of stove-piped systems, to a single, integrated, service-oriented, and standards-based environment, Unit Task Reorganization (UTR) capabilities must also evolve in the same manner. The ability to read, modify, and exchange data in a uniform and efficient manner is essential to achieving an integrated UTR solution. Efficient data sharing is a fundamental characteristic of modern-day integrated systems. Today, UTR is a complex, manually intensive, and time-consuming process. This is due, in part, to the large increase in network-enabled nodes within the tactical network. In addition, tools employed by the G/S-6 staff to conduct UTR are designed, developed, and fielded by various program and product managers each with discrete requirements, development schedules, and funding lines. This impedes the G/S-6 staffs' ability to conduct UTR in an integrated manner. To enhance UTR, we will address four fundamental challenges to improve UTR.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: UTR Common Data Model ***Description:*** Design and develop a UTR Common Data Model (CDM) capable of representing tactical C4ISR systems and their runtime and planned initialization data. The UTR CDM shall provide a common, structured, machine-readable, and self-describing format. It shall be an extensible and object-oriented data model facilitating data sharing among existing and future tactical C4ISR systems and UTR tools. ***FY 2017 Plans:*** Design and develop a UTR Common Data Model (CDM) capable of representing tactical C4ISR systems and their runtime and planned initialization data. The UTR CDM shall provide a common, structured, machine-readable, and self-describing format. It shall be an extensible and object-oriented data model facilitating data sharing among existing and future tactical C4ISR systems and UTR tools.	-	-	11.731
Title: UTR Data Repositories ***Description:*** UTR Data Repository is that of a distributed, authoritative database architecture capable of storing, synchronizing, and presenting existing, planned, and archived initialization data. The repositories shall be distributed and connected across each echelon of the tactical network. ***FY 2017 Plans:***	-	-	6.285

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
UTR Data Repository is that of a distributed, authoritative database architecture capable of storing, synchronizing, and presenting existing, planned, and archived initialization data. The repositories shall be distributed and connected across each echelon of the tactical network.			
Title: UTR Data Dissemination Service ***Description:*** Design and develop a UTR Data Dissemination Service (UTR DDS). It is a data distribution methodology for disseminating existing and planned initialization data through the tactical network (both within and between tactical echelons), as required. ***FY 2017 Plans:*** Design and develop a UTR Data Dissemination Service (UTR DDS). It is a data distribution methodology for disseminating existing and planned initialization data through the tactical network (both within and between tactical echelons), as required.	-	-	3.897
Title: UTR Automated Initialization Service ***Description:*** Design and develop the UTR Automated Initialization Service (AIS). It is envisioned as a mechanism that automates the manual workflows for initializing tactical C4ISR systems. In addition, it aims to decouple the planning and initialization functions, so that each function can be performed at the appropriate tactical echelon. ***FY 2017 Plans:*** Design and develop the UTR Automated Initialization Service (AIS). It is envisioned as a mechanism that automates the manual workflows for initializing tactical C4ISR systems. In addition, it aims to decouple the planning and initialization functions, so that each function can be performed at the appropriate tactical echelon.	-	-	1.115
Title: PMO ***Description:*** The PMO cost is oversight and management of the design and development efforts. These people will lead, manage, and provide direction to the development teams. ***FY 2017 Plans:*** The PMO cost is oversight and management of the design and development efforts. These people will lead, manage, and provide direction to the development teams.	-	-	1.470
Accomplishments/Planned Programs Subtotals	-	-	24.498

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

As the Army's tactical network continues to evolve from a loose federation of stove-piped systems, to a single, integrated, service-oriented, and standards-based environment, UTR capabilities must also evolve in the same manner. Today, UTR is a complex, manually intensive, and time-consuming process. This is due in part, to the large increase in network-enabled nodes within the tactical network. In addition, tools employed by the G/S-6 staff to conduct UTR are designed, developed, and fielded by various program and product managers each with discrete requirements, development schedules, and funding lines. This impedes the G/S-6 staffs' ability to conduct UTR in an integrated manner.To enhance UTR we will address five fundamental challenges to improve UTR. Efficient data sharing is a fundamental characteristic of modern-day integrated systems. The ability to read, modify, and exchange data in a uniform and efficient manner is essential to achieving an integrated UTR solution.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EW3 / *Unit Task Reorganization (UTR) Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UTR Common Data Model	TBD	TBD : TBD	0.000	-		-		11.731		-		11.731	0	11.731	0
UTR Data Repositories	TBD	TBD : TBD	0.000	-		-		6.285		-		6.285	0	6.285	0
UTR Data Dissemination Service	TBD	TBD : TBD	0.000	-		-		3.897		-		3.897	0	3.897	0
UTR Automated Initialization Service	TBD	TBD : TBD	0.000	-		-		1.115		-		1.115	0	1.115	0
		Subtotal	0.000	-		-		23.028		-		23.028	0.000	23.028	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO	TBD	TBD : TBD	0.000	-		-		1.470		-		1.470	0	1.470	0
		Subtotal	0.000	-		-		1.470		-		1.470	0.000	1.470	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		24.498		-		24.498	0.000	24.498	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

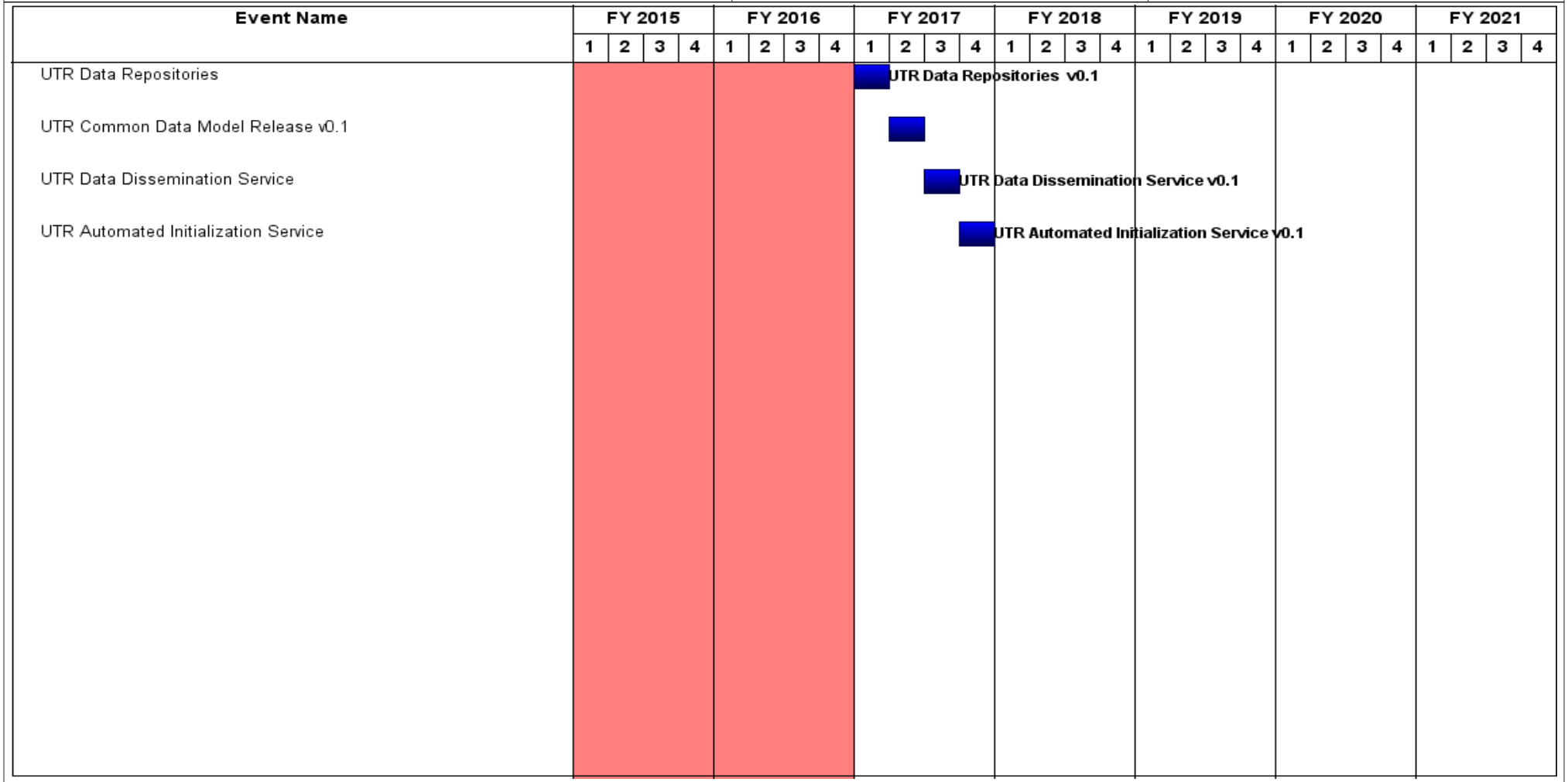

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
UTR Data Repositories	1	2017	1	2017
UTR Common Data Model Release v0.1	2	2017	2	2017
UTR Data Dissemination Service	3	2017	3	2017
UTR Automated Initialization Service	4	2017	4	2017