Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army											Date: May 2017	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604798A / *Brigade Analysis, Integration and Evaluation*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	-	96.286	146.655	145.360	-	145.360	128.742	126.304	118.970	129.154	Continuing	Continuing
DY3: *NIE Test & Evaluation*	-	10.768	65.844	58.395	-	58.395	61.482	49.699	45.735	50.051	Continuing	Continuing
DY4: *Network Integration Support*	-	13.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.700
DY5: *Production/Field Coordination for Capability Sets*	-	3.486	3.960	4.261	-	4.261	4.349	4.434	4.524	4.502	Continuing	Continuing
DY6: *Brigade and Platform Integration Support*	-	44.164	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	44.164
DY7: *Army Systems Engineering, Architecture & Analysis*	-	15.802	14.166	15.508	-	15.508	15.998	25.121	25.499	26.214	Continuing	Continuing
DZ6: *Army Integration Management & Coordination*	-	8.366	5.746	6.775	-	6.775	6.922	7.065	7.217	7.367	Continuing	Continuing
FG7: *Emerging Technology Initiatives*	-	0.000	56.939	60.421	-	60.421	39.991	39.985	35.995	41.020	Continuing	Continuing

Note

Project FG7 Emerging Technology Initiatives was created in support of the Army Rapid Capabilities Office (RCO). This project will be realigned to PE 0605054A Emerging Technologies Initiatives in FY 2019 for greater transparency of the Army RCO efforts.

A. Mission Description and Budget Item Justification

This program element is comprised of five projects: Network Integration Evaluation (NIE) Test and Evaluation; Production/Field Coordination for Capability Sets; Army Systems Engineering, Architecture & Analysis; Army Integration Management & Coordination; and Emerging Technology Initiatives. The specific evaluation requirements will support Mission Command Network 2020, Force 2025 objectives, and emerging technology insertion.

Project DY3: Network Integration Evaluation (NIE) Test & Evaluation, synchronizes, integrates, and manages system and System of Systems (SoS) network capability evaluations in laboratory and operational environments in order to inform Army force modernization decisions that impact network improvements, interoperability compliance, operational readiness, and exploitable technology opportunities.

Project DY4: Network Integration Support, the mission requirements and the funding to support those requirements have been moved to DY3; NIE Test & Evaluation to increase transparency of evaluation efforts and cost.

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army	Date: May 2017
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Project DY5: Production/Fielding Coordination for Capability Sets, provides for the development of a synchronized Brigade/Division level plan for the Production equipment delivery and Fielding (hand-off logistics and new equipment training) of Capability Set (CS) components (both hardware/software in A and/or B Kits) upon completion of Network Integration Evaluation (NIE), Army Interoperability Certification (AIC) and Army CS fielding decision.

Project DY6: Brigade and Platform Integration Support, the mission requirements and the funding to support those requirements have been moved to DY3; NIE Test & Evaluation to increase transparency of evaluation efforts and cost.

Project DY7: Army System Engineering, Architecture & Analysis, provides the Army's leadership and materiel developers with the necessary modernization planning, System of Systems (SoS) engineering, technical analysis, architectural products, critical path analysis, and risk analysis and mitigation planning to influence the Army's materiel portfolio. This project also explicitly funds Cyber Security engineering, architecture and development tasks necessary to create effective, affordable and secure network capabilities that address critical gaps, meet Mission Command Network (MCN) 2020 objectives and/or Force 2025 and Beyond (F2025B) initiatives. Integration of Army defensive/offensive cyber and Position, Navigation, and Timing (PNT) capabilities into the overall CS design, Multinational/Mission Partner Environments architecture development at both the tactical and enterprise levels, network modernization risks/gaps for Corps level units and below, and Army spectrum strategy.

Project DZ6: Army Integration Management & Coordination, provides for all "shared" functions (Human resources, Budget development and executions, Acquisition, Operations, Program Coordination, Facilities management) and headquarters functions that supports the technical aspects of the Network integration, Platform integration, Brigade Integration and the Production Integration and coordination and synchronized fielding teams.

Project FG7: Emerging Technology Initiatives, will fund prototyping and demonstration of selected technology enabled capabilities to defeat emerging threats against ground, aviation, command, control, communications & reconnaissance systems and equipment, precision weapons, and Soldier equipment. Funding facilitates maturation and demonstration of emerging technologies and systems in relevant varied environments and tactical/operational scenarios. The focus is to mature technologies with a goal of initial production, limited fielding, and transition to a Program of Record in an Army or DoD Program Management Office.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	99.242	89.716	101.538	-	101.538
Current President's Budget	96.286	146.655	145.360	-	145.360
Total Adjustments	-2.956	56.939	43.822	-	43.822
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.955	-			
• Adjustments to Budget Years	-0.001	0.000	-16.599	-	-16.599

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army					Date: May 2017
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0604798A *I Brigade Analysis, Integration and Evaluation*			
• Emerging Technology Initiatives (FG7) line added	0.000	56.939	60.421	-	60.421

Change Summary Explanation

FY 2017 program change reflects the additional funding in the amount of $56.939 Million supports Army's Rapid Capabilities Office (RCO) efforts under project FG7.

FY 2018 program change reflects the additional base funding in the amount of $60.421 Million to support the Army's Rapid Capabilities Office (RCO).

FY 2018 program changes also reflect funding reductions from projects DY3 (-8.916) and DY7 (-8.668), as well as, additional funding in support of projects DY5 (1.162) and DZ6 (0.823).

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / *Brigade Analysis, Integration and Evaluation*	Project (Number/Name) DY3 / *NIE Test & Evaluation*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
DY3: *NIE Test & Evaluation*	-	10.768	65.844	58.395	-	58.395	61.482	49.699	45.735	50.051	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project DY3: Network Integration Evaluation (NIE) Test & Evaluation, synchronizes, integrates, and manages system and System of Systems (SoS) network capability evaluations in laboratory and operational environments in order to inform Army force modernization decisions that impact network improvements, interoperability compliance, operational readiness, and exploitable technology opportunities.

There are two planned integration events annually: a NIE and a Joint Warfighting Assessment (JWA) [formerly known as an Army Warfighting Assessment (AWA)]. The NIE will focus on assessments of Program of Record (PoR) capabilities in support of synchronized Capability Set (CS) fielding of network systems. The JWA will focus on Force 2025 concepts; interoperability & Army Warfighting Challenges (AWFCs); and emerging capabilities.

These funds support the following major efforts associated with each event:

- Planning: planning, coordination, and scheduling with multiple stakeholders participation and resourcing of personnel, services, equipment and prototypes, and other deliverables needed for lab based risk reduction (LBRR), network and platform integration, training, field support and logistics, and event battle rhythm/schedule.
- Engineering and Architecture: developing SoS architecture, operational threads, engineering design packages, configuration management, and network data products as well as analyzing network performance and validating CS architecture products with independent evaluations of Program Executive Offices (PEO)- and Program Manager (PM)-sponsored solutions and services proposed for CS19-23 fielding activities.
- LBRR: executing risk reduction for SoS NIE/JWA network architecture designs in controlled laboratory environments in order to minimize integration, configuration and interoperability issues that may be encountered during field events.
- Integration: building Golden Vehicles for safety release, performing Brigade platform installation, instrumentation, and checkout, validating the network, and Information Assurance certifications.
- Execution: technical and logistics support during soldier-led evaluation, data collection, trouble ticket analysis and closeout, and battle rhythm and field support management.
- Close-out: inventorying platforms, de-installing equipment, returning platforms to their original configurations, updating documentation, and reporting (to include feedback to industry on technology performance).

These funds are also used for procuring equipment and materials (to include prototypes, when required), event infrastructure, Satellite Communications, field services, personnel (government and contractor), and travel.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: NIE Test and Evaluation Costs	6.568	-	-
Description: These funds provide for planning and conducting detailed experiments, tests and evaluations of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
FY 2016 Accomplishments: Two major events occurred in FY 2016: NIE 16.2 and AWA 17.1. For NIE 16.2, the organization designed, engineered, and integrated network components, subsystems, and systems onto 26 Golden Vehicles (GVs) and successfully completed safety assessments for 12 platforms in order to ensure their safe operation by soldiers. Following the GV effort, the organization successfully integrated and completed quality and validation checks on 220 Fleet vehicles used by the Brigade Combat Team during the NIE. After completion of the formal evaluation event, the Capability Package Directorate (CPD) demod-ed and returned 220 vehicles to the 2/1 AD BCT. The organization also completed test planning, coordination of requirements, asset planning, range planning, and soldier planning. Conducted test planning and management which included coordination of requirements with Army Evaluation Center (AEC), Operational Test Command (OTC), and White Sands Missile Range (WSMR), for formal evaluations of Systems Under Test (SUTs), and the Brigade Modernization Command (BMC) for Doctrine, Organization, Leadership, and Materiel (DOTLM) assessments of Systems Under Evaluation (SUEs), Risk Reduction efforts, and Demonstrations . This coordination included development and procurement of modeling and simulation tools, instrumentation for data collection, facilities required to store and maintain equipment, facilities required to integrate capabilities, other test equipment, and REDFORCE systems. Conducted safety and operational assessments, data collection, data analysis and report development. Conducted experimentation, tests, and evaluation by coordinating and procuring range resources to include range time, range personnel, test engineering support, operators and subject matter experts on systems under evaluation. Includes costs of management of the test/experiment and support all experiments and tests. Also included costs for distributed networking capability (i.e. Defense Research Engineering (DREN), I/O Range, circuits, etc.) and other electronic infrastructure data transfer medias between Aberdeen Proving Ground (APG), Electronic Proving Ground (EPG), FT Bliss and White Sands Missile Range. Conducted coordination with AEC on the development of System Evaluation Plans (SEP) and Operational Milestone Assessment Reports (OMAR) and maintain all data bases of evaluation analysis. Conduct Red/Blue Force Team Cyber assessments in the lab and in the field. For NIE 17.1, the organization designed, engineered, and integrated network components, subsystems, and systems onto 25 Golden Vehicles (GVs) and successfully completed safety assessments for 10 platforms in order to ensure their safe operation by soldiers. Following the GV effort, the organization successfully integrated and completed quality and validation checks on 102 Fleet vehicles used by the Brigade Combat Team during the AWA. After completion of the formal evaluation event, the Capability Package Directorate (CPD) demod-ed and returned 102 vehicles to the 2/1 AD BCT. The organization also completed planning and coordination of requirements, asset planning, integration and vehicle support planning, range planning, and soldier planning with JMC personnel as well as representatives of three multinational partners: the UK, Canada, and Australia. CPD also coordinated with BMC and WSMR to support Doctrine, Organization, Leadership, and Materiel (DOTLM) assessments of Systems Under Evaluation (SUEs), Risk Reduction efforts, and Demonstrations. Includes costs of management of the test/experiment and support all experiments and tests.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Also included costs for distributed networking capability (i.e. Defense Research Engineering (DREN), I/O Range, circuits, etc.) and other electronic infrastructure data transfer medias between Aberdeen Proving Ground (APG), Electronic Proving Ground (EPG), FT Bliss and White Sands Missile Range. Conducted coordination with AEC on the development of System Evaluation Plans (SEP) and Operational Milestone Assessment Reports (OMAR) and maintain all data bases of evaluation analysis. Conduct Red/Blue Force Team Cyber assessments in the lab and in the field.			
Title: Other Support Cost ***Description:*** Other Support Cost required for NIE/AWA Events. ***FY 2016 Accomplishments:*** Procured and managed satellite time, POL, security support, facilities, MEDEVAC support, blade time for helicopters, and others services, equipment and maintenance of facilities to ensure a successful evaluation/test. Coordinated and processed receipt and recovery of 220 vehicles for NIE 16.2 and 102 vehicles for AWA 17.1.	4.200	-	-
Title: Integrated Evaluations ***Description:*** These funds enable evaluations/assessments of network capabilities in laboratory and operational environments across the Army battlespace to assess the systems, SoS, and integrated network performance and inform system development and fielding decisions. These funds support event planning, engineering and architecture, LBRR, network and platform integration, event execution, and event close-out. ***FY 2017 Plans:*** These funds provide for: - AWA 17.1 close-out. This support consists of: performing detailed analysis of up to 2000 SIF trouble tickets to identify System, and/or System of Systems, trends that manifested themselves during any given phase of the AWA, and publishing a formal report. - NIE 17.2 and AWA 18.1 planning and preparation. Support listed here is common to both events, unless otherwise noted, and will consist of: - For each event, providing technical input on platform Size Weight and Power (SWAP) constraints or restrictions that must be considered for placement of candidate systems in the Horse Blanket; participation in Bull Pen sessions to; finalize candidate system parameters and characteristics needed for platform/system engineering designs; verify accreditation status for all network systems; identify supporting hardware and software requirements; and finalize delivery schedules for the respective events; conduct planning and coordination for Tier 1 Integrated Master Schedule (IMS), as well as development of lower tier schedules	-	64.959	55.934

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
for integration; complete the development of Engineering Design packages (drawings, diagrams, manuals) and Bills of Materials (BOMs) for integrating system A/B Kits on up to 250 tactical platforms, (This includes development of up to 50 Prototype (Golden) Vehicles (GV) and for NIE 17.2 only, engineering design packages also include instrumentation needed for System-Under-Test data collection); complete the development of Network Engineering designs, plans, and schedules for integrating and configuring on up to 3000 C4ISR systems, to include baseline and legacy systems, enabling these systems to join and operate on the network; complete the implementation of Configuration Management (CM) for up to 250 Tactical Platform architectural implementations, engineering designs, A-Kits, B-Kits, and the Integrated Master Schedules; procure up to 20,000 materials, fasteners, cables, components, and other items needed for installing NIE/AWA systems on up to 250 tactical platforms; fabricate of up to 1,000 special cables and up to 1,000 metal plates, racks, and brackets, needed for system installation on up to 250 platforms; coordinate hardware and software system deliveries to the Integration Motor Pool (IMP) at Fort Bliss, TX; provide access control and badging for IMP and field operations for up to 5000 personnel; conduct planning and Coordination with BMC for developing and issuing Operational Orders (OPORDS), Fragmentary Orders (FRAGOS), and other directives, for 2/1 AD, and other Unit, support. - For NIE17.2 only, coordination with CS design teams for CS-19 equipment baseline implementation: To ensure equipment and network interface designs support the CS-19 architecture, CS-19 training support requirement, to establish the methods to be followed for informing the CS design teams on CS-19 issues and/or trends, to address Integrated Logistics System (ILS) requirements, and capture Lessons Learned in the form of After Action Reviews, Technical Reports, and Feedback on CS-19 systemic issues encountered during Integration, conduct field Based Risk Reduction testing for up to 4 complex platform builds, and preparation of up to 50 integrated platforms (25 for AWA 18.1) for safety release testing. - IMP operations for each event, including; Administrative support for up to 600 Program Managers (PMs), Original Equipment Manufacturers (OEMs), and Field Service Representatives (FSRs) Office space, Internet access, conferencing, etc., managing and coordinating technical support, during GV design, and during GV/Fleet Build for up to 500 FSRs and OEMs, packaging and shipping up to 200 packages of components and equipment and receiving up to 4000 packages of equipment, components and materials, warehousing up to 2,000 pieces of equipment and up to 20,000 components and materials, supporting inspection teams for up to 250 tactical platforms delivered for subsequent integration, managing up to 250 Tactical Platforms, including movement into IMP High Bays, security for the IMP and for technical field support bases, enforce safety standards, conduct hazardous waste management, support installation teams for up to 250 tactical platforms, conduct System of System Checkouts on over 400 platforms, to verify all installed systems and equipment interoperate with each other, as well as with legacy C4ISR/Vehicular Systems, conduct QA/QC checkouts for up to 250 integrated platforms. - For each event, coordinate New Equipment Training (NET) Quality Control and Scheduling, provide troubleshooting support for integration related issues/problems during the Validation and Communications Exercise phases (VALEX and Garrison COMMEX),			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Utilization of Single Interface to the Field (SIF) failure reporting and corrective action system (FRACAS), for generating trouble tickets and assigning technical support teams to resolve problems or issues reported during VALEX. - For NIE 17.2, Coordinating with System Owners, vendors, and Brigade Modernization Command (BMC), for NET Training Package development and delivery. Coordinating with BMC and with System owners/vendors for scheduling and providing NET for up to 1,000 soldiers. Perform detailed analysis of up to 2000 SIF trouble tickets to identify System, and/or System of Systems, trends that manifested themselves during any given phase of the NIE, and publishing a formal report, develop and publish up to 20 formal technical reports for C4ISR systems integrated and installed as part of the NIE. - For AWA 18.1, NET support outlined above is only provided for Networked Systems. Non-Networked systems NET support is TRADOCs responsibility. - NIE17.2/AWA 18.1 Execution/Closeout: For each event, establishing field operations for Technical Support teams to operate from during Field COMMEX and Event Execution, provide field support will include a Higher Control (HICON) element, two Regional Support Teams (RSTs), and up to six Unit Support Teams (USTs), ensure that the HICON, RSTs, and USTs is strategically emplaced throughout the NIE footprint to enable technical support teams to respond to, and resolve, problems reported by soldiers in the field, ensure utilization of SIF FRACAS, managed at the HICON, for generating trouble tickets and assigning technical support teams to resolve problems or issues reported by the soldiers, and establishing logistics cells at the IMP and at strategic locations in the NIE footprint, enabling rapid response times for spare parts and components needed to repair and resolve NIE system issues while the Unit is in the field, de-modifying integrated C4ISR systems from up to 250 platforms and returning those platforms to their original configurations, oversee the updating and finalizing up to 50 engineering design drawings based on the outcomes of VALEX, Garrison COMMEX, Field COMMEX, and Event Execution. - After each event, recovery of up to 250 Tactical Platforms back to the CPD Integration Motor Pool (IMP), at Fort Bliss, Texas. - NIE 18.2 Early Planning: Provide technical input on platform SWAP constraints or restrictions that must be considered for placement of candidate systems in the Test Brigade Horse Blanket, participate in Bull Pen sessions to: finalize candidate system parameters and characteristics in order to support platform/system engineering designs; verify accreditation status for all network systems; identify supporting hardware and software requirements; and finalize delivery schedules for the respective events and conduct the planning and coordination for Tier 1 Integrated Master Schedule (IMS), as well as development of lower tier schedules for integration. - NIE Network Integration and Validation: Funds provide for loading, establishing, integrating, and validating that the Network Integration Evaluation / Army Warfighter Assessment (NIE/AWA) network is stable, and that NIE/AWA networked systems, are			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
integrated on tactical platforms, and can join and operate on the NIE/AWA network. It supports all activities associated with planning, coordination, preparation, and execution of Network Validation Exercises (VALEX) for NIE 17.2 and AWA 18.1, as well as planning, coordination, and preparation for VALEX during AWA18.2. Once Platform Integration for NIE 17.2 and AWA 18.1 is complete, Capability Package Directorate (CPD) conducts VALEX to verify and demonstrate that integrated networked systems are properly configured and loaded to operate on the NIE network. At the same time CPD also verifies and validates the overarching NIE/AWA network is stable and operating nominally, prior to being handed over to BMC and 2/1 AD for NIE/AWA execution. - For each event, Capability Package Directorate's Trail Boss teams (consisting of Government and Contractor personnel), along with Platform Integration engineers and technicians, and ILS personnel, perform intensive planning and coordination leading up to the VALEX: oversee the planning and coordinating for; the Integration Motor Pool (IMP) layout for Command Posts and for integrated and legacy platforms that will be involved in VALEX, working to identify and resolve security issues associated with running classified/Coalition networked operations at the IMP, Data Products needed to load, configure, and initialize NIE/AWA networked systems and the underlying network devices (routers, switches, drivers, etc.), securing Information Assurance Accreditations for all networked C4ISR systems, including baseline and legacy systems, conduct coordination with; Lab Based Risk Reduction representatives for development of priority technical mission threads that will be used to validate the NIE network, ensure the development of; the battle rhythm (VALEX activities, meetings, technical forums for problem identification and resolution, leadership updates, etc.) for VALEX teams to follow during actual VALEX execution. The development of Network and Interconnecting Diagrams that are critical for defining networked system configurations, routing schemes, and routing architectures for networked systems and devices and Spectrum Plan for allocating and de-conflicting operating frequencies for all radiating systems involved in the NIE/AWA, including all NIE/AWA systems and all legacy systems. - For NIE 17.2 only, planning and coordination with ATEC to verify installed instrumentation is properly configured for data collection. For each event, unless otherwise noted, execute and provide technical support for each of the VALEX major phases: - During the LOADEX phase, CPD Trail Boss teams, working with Program of Record (POR) representatives, Legacy System Field Service Representatives (FSRs), and Vendor FSRs, and other key stakeholders, perform the following functions: Install networked system's hard drives, operating system software, software applications, and firmware on up to 2500 systems, Set IP addresses and configure all network systems, and load and initialize Radio Mission Plans, System configuration files and system parameters on up to 400 platforms. For NIE 17.2 only, load software on up to 250 instrumentation packages and configure as required for data collection. Perform test/fix/test processes at the system and component levels.			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
- During the ESTABLISH phase, CPD Trail Boss teams, working with vendor FSRs, Legacy FSRs, and POR technical representatives, and other key stakeholders, perform the following functions: Verify networked hardware and software performance at the platform level, troubleshoot issues associated with network system configurations, Verify each integrated platform can perform its mission while operating on the NIE network. These activities typically involve up to 400 ESTABLISH tasks. - During the INTEGRATE phase, CPD trail boss teams, working with vendor FSRs, Legacy FSRs, and POR technical representatives, and other key stakeholders, perform the following functions: Verify networked hardware and software performance and networked communications at each echelon (i.e., between platforms and soldiers at the Platoon Level), as well as between echelons, all the way up to the Brigade level, and at echelons above Brigade, Troubleshoot any issues between units and at each echelon, and ensure tactical units information exchange enables units to support their intended missions. - For NIE 17.2 only, verify instrumentation is operational and is collecting and storing data as required. These activities typically involve up to 400 INTEGRATE tasks, and continue providing over-the-shoulder training for Soldiers who will be using the new BCT network during the NIE. During the VALIDATE phase, CPD trail boss teams, working with vendor FSRs, Legacy FSRs, and POR technical representatives, and other key stakeholders, execute up to 40 mission threads to: route messaging and information along specified critical nodes on the NIE/AWA Network, enabling operational missions to be executed by the soldiers, demonstrate the NIE/AWA Overarching Network's ability to enable the BCT commander to utilize key capabilities that rely on the network such as Networked Services (Server-Client Systems such as CPOF, Intel, VOIP conferencing, etc.) For NIE 17.2 only, ensure instrumentation is properly configured for capturing and logging data, enabling ATEC and TRADOC assessments and evaluations. - Lab Based Risk Reduction (LBRR) to support Integrated Evaluations: These funds provide SME to plan, coordinate, integrate and execute the risk reduction for the full System of Systems network/ architecture designs in the Network Integration Evaluation (NIE) and Army Warfighter Assessment (AWA) in controlled environments to minimize integration, configuration and interoperability risk in the events. LBRR efforts are used to: reduce risk in the Network Integration Evaluation (NIEs) 17.2 and the Army Warfighter Assessment (AWA) 18.1 and planning for 18.2, coordinate logistics and equipment delivery of resources planned for LBRR, build, integrate and configure the System of Systems network architecture in the lab using actual Program of Record hardware and COE software in preparation for risk reduction execution. Configuration also includes support for loading of the actual NIE/AWA data products for validation, lead and coordinate the NIE/AWA System of Systems testing between external sites participating in risk reduction, develop. The risk reduction plan includes: functional testing, routing, thread testing, as well as the design of the lab network in order to effectively represent the NIE/AWA architecture to provide for AWA and NIE executions. Provides SME during AWA and NIE execution to help design the network configuration and address any network issues. This is			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
done in the lab and in the field. LBRR personal also interface with PORs to ensure their successful integration into the network. It also leverages network resources to conduct network analysis efforts to improve future Army networks, end states, in support of future AWAs and NIEs, executes blue teaming/red teaming and other cyber tasks to inform on early Network Cyber requirements, provides lab evaluations of POR and demonstration systems and reports on how they meet Network 2020 or Force 2025B requirements and supports the management of trouble tickets and test incident reports for configuration management of testing issues to effectively report resolved and outstanding items as LBRR transitions into the Validation Exercise (VALEX). - Network Architecture &Thread Development to support Integrated Evaluations: These funds provide SME to coordinate the NIE/AWA 17.2, 18.1 and 18.2 architecture planning & development to meet all event test and evaluation objectives. Lead the documentation of the overall NIE/AWA network architecture and technical System of System threads. - These funds also provides for: collaboration with BMC, ATEC & G3/5/7 on the development of the detailed System of Systems Architecture to meet all evaluation and operational test requirements. Detailed development includes node by node systems planning, to build NIE/AWA Horse Blankets, lead Focused End States and other factors in forward planning and candidate assessments of the NIE/AWA Strategic Planning Review (SPR), Co-lead the NIE/AWA 17.2 and 18.1 Bullpen Sessions to ensure all architecture systems meet stakeholder evaluation requirements and finalize the NIE/AWA Horse Blanket, development of the detailed SoS Network Architecture in the form of the Transport View Diagrams and designing and maintaining the System of Systems Technical Threads of the NIE/AWA 17.2 and 18.1 in order to show operational use cases applied over the NIE/AWA. Development activities include leading the Critical Design Reviews of individual threads with both material/Program Manager (PM) and TRADOC stakeholders. It supports: LBRR during the thread risk reduction event and PM CP during the Validation Exercise (VALEX) during NIE/AWA 17.2 and 18.1 leading the coordination of individual thread validations to show SoS interoperability within the integrated architecture after all network integration and configuration have completed and it also supports maintaining the current custom scripts that enable data migration between the ARCADIE-derived Horse Blanket spreadsheet and the MagicDraw tool that is used to diagram the Transport View and Technical Threads deck. - System of Systems (SoS) Network Performance Analysis to support Integrated Evaluations: These funds provide the Subject Matter Expertise to execute diverse and independent portfolio of Network System of Systems performance analyses involving multiple-PEO systems (C3T, IEW&S, Soldier, GCS, STRI) and their cross-PEO integration which enables key acquisition-level decisions, Mission Command network (MCN) Capability portfolio reviews (CPRs), it also enables capability set (CS) architecture product Courses of Action COAs development and validation and provides Army Acquisition Executives (AAEs) and OSD with independent evaluations of PEO/PM solutions and services. - These funds also enable SMEs to conduct Transport Convergence of Intel/C2/Logistics/Medical performance analysis and network performance requirements development (all C4ISR/EW PEOs), Integrated Network Performance Assessments (INPA) of			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
NIE 17.2 and AWA 18.1, and assessments of Current and Future Network Cyber vulnerabilities and provide recommendations for solutions and/or architectural changes to resolve and/or mitigate them. Enduring analytical capabilities that enable these analysis will also be strengthened and standardized, to include: Army real-time OSD-metrics-driven Big Data performance analytics and Mission Essential / Mission Enhanced (MEME) operational impact assessment methodology (aka from technical to operational). - NIE /AWA and Alternate Venue Planning (Module 1-3): These funds provide for strategic planning to solicit and synchronize candidates and objectives for NIE and AWA bi-annual events. It establishes initial objectives, solidifies the architecture baseline and will establish a viable candidate list for Network Integration Evaluation (NIE) and Army Warfighter Assessment (AWA). Addresses planning for operational assessments to occur at venues other than NIE or AWA. Complete test planning, coordination of requirements, assets planning, and soldier planning. It supports the compilations of potential solutions that could meet the Army's Mission Command gaps and the US Army Training and Doctrine Command (TRADOC) identified opportunities. It includes the coordinated efforts between System of Systems Integration (SOSE&I), ASA(ALT) Program Executive Offices, Deputy Chief of Staff G3/5/7, Brigade Modernization Command (BMC) Ft Bliss and the Army Test and Evaluation Command (ATEC). Project also includes the initial integration phase where Systems Under Test (SUT) and government/industry System Under Evaluation (SUE) hardware and software are integrated and initially evaluated for follow-on consideration for lab assessments. These funds provide for planning detailed experiments, tests and evaluations of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system. Effort to solicit and select capabilities for inclusion in the NIE and AWA bi-annual events supporting Army's Network 2020 Endstates and Objectives and Forces 2025 beyond. Effort includes correspondence to NIE and AWA Participants, consolidation, analysis and publishing post-event reports and findings, analyze and consolidate event findings and development of implementation plans and to develop and maintain NIE and AWA specific Integrated Master Schedule (IMS). Effort to finalize the architecture, requirements, and horseblanket for each NIE and AWA and maintains horseblanket and IMS under formal CM processes, incorporates analysis and architecture objectives to influence CS fielding, facilitating platform reviews. Customers include HQDA G-3/5/7, G-8. TRADOC, ASA(ALT) PEOs, CIO/G-6, ATEC, deploying units, industry partners. - These fund also provide for the following: stakeholder Synchronization, Gatekeeper Management, Horse Blanket Initial development and analysis, Gov/Industry Solicitation, participant proposal evaluation, participation coordination, consolidation of stakeholder reports, individual final report generation to participants, incorporation of AWA results into PoR initiatives (.1 feedback loop to .2), cross directorate analysis and reporting, Alternate Venue planning, TSARC outcomes analysis, Implementation Memoranda, and Strategic Planning Review event planning and execution, Bull Pen event planning and execution. - MCN2020 Focused End State Alignment: These funds provide SMEs to analyze and coordinate identified PoRs on the NIE roadmap to achieve Mission Command Network 2020 End States and Objectives. It provides the Army's leadership and materiel developers with the necessary Capability Set (CS) modernization planning, critical path analysis, risk analysis and mitigation			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
planning, system of systems engineering (SOSE), technical analysis and architectural products to inform the Army's materiel portfolio (5 to 10 year plans). Lead and facilitate planning of long term Engineering & Architecture objectives across multiple PORs for support of MCN 2020 Objectives and Focused End States. - System of Systems (SoS) Network Performance Analysis: These funds provide the Subject Matter Expertise to execute diverse and independent portfolio of Network System of Systems performance analyses involving multiple-PEO systems and their cross-PEO integration which enables key acquisition-level decisions, Mission Command network (MCN) Capability portfolio reviews (CPRs), it also enables capability set (CS) architecture product Courses of Action COAs development and validation and provides Army Acquisition Executives (AAEs) and OSD with independent evaluations of PEO/PM solutions and services. It also funds conducting: cross-PEO Network System of System (SoS) performance analysis which includes the following key tasks and activities, CS20-22 reference architecture (IBCT, ABCT) performance validation/prediction analysis, to include operational impact assessment of the proposed architectural COAs, and sustainment improvement analysis, assessments of Position, Navigation and Timing (PNT) solution performance. - Network Integration Evaluation Long-range Investment Requirements Analysis (LIRA): These funds provide SMEs to develop LIRA for NIEs and evolution to Capability Integration Evaluations after FY 2020. It provides the Army's leadership and materiel developers with the necessary Capability Set (CS) modernization planning, critical path analysis, risk analysis and mitigation planning, system of systems engineering (SOSE), technical analysis and architectural products to inform the Army's materiel portfolio (5 and 30 year plans). Short and long term planning for evaluation and evolution of Network and Capability Integration evaluations after FY 2020. - Cyber support to Integrated Evaluations: The funds are provided to manage the NIE cyber security project including the NIE Authority to Connect (ATC) process and risk analysis for the Operational Test Network (OTN). Establish and maintain cybersecurity policies for NIE including a complete refresh of the cybersecurity Smartbook. It also includes: continually tracking accreditations for Capability Sets, champion certification and accreditation (C&A) impacts to scheduling and coordinating all cybersecurity activities for NIE/AWA including red, blue, and green team activities; ensure activities are funded through NIE Gatekeepers, coordinate threat briefing to the AO and all assessment out-briefs. - Strategic support to Platform in Integration Evaluation (SsP-IE): These funds provide for the advance collaboration and coordination with platform and network system Product/Project/Program Managers (PMs) to ensure Capability Set (CS) fielding platform integration design decisions are based on CS Reference Architecture products for CS16-22 to be evaluated in Network Integration Evaluation (NIE) events. Develop the Unit-specific architecture.			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
- SsP-IE: CS16 Products and Services: Close out of CS16 platform integration activities for the design of current and future Army network technologies in Army vehicle systems for evaluations at NIE 14.1 and 14.2 and finalize leveraging NIE technical data packages, network trend analysis, architecture, vehicle designs, platform integration challenges, strategic planning, Validation Exercise (VALEX) and SharePoint data sharing. - SsP-IE: CS17 Products and Services: Direct the design and integration of current and future Army network technologies in Army vehicle systems for evaluations at NIE 15.1 and 15.2. Define platform integration requirements for CS17 baseline NIE 15.1 and 15.2 evaluations, leveraging NIE technical data packages, network trend analysis, architecture, vehicle designs, platform integration challenges, strategic planning, Validation Exercise (VALEX), and SharePoint data sharing. Evaluate, synchronize and monitor platform and network system integration risks and mitigation plans for CS17 Unit specific Architectures in collaboration and coordination with platform and network system PMs. Evaluate, synchronize and monitor platform and network system program acquisition schedules, integration costs, and system requirements across organizations for the development of production ready A&B-kit Interface Control Documents (ICDs) and Level II Technical Data Packages (TDPs) supporting CS17 Unit specific baseline evaluations in collaboration and coordination with platform and network system PMs. Evaluate, synchronize and monitor PM implementation of Vehicle Integration for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR)/ Electronic Warfare (EW) Interoperability (VICTORY) standards in Unit specific Architecture products. - SsP-IE: CS18 Products and Services: Define platform integration requirements for CS18 baseline NIE evaluation; leveraging NIE technical data packages, network trend analysis, architecture, vehicle designs, platform integration challenges, strategic planning, VALEX, and SharePoint data sharing. Evaluate, synchronize and monitor platform and network system Size, Weight and Power (SWaP) assessment of CS18 Unit specific Architectures in collaboration and coordination with platform and network system PMs. Support platform Original Equipment Manufacturer (OEM) design and integration activities for NIE and CS baseline events. Evaluate, synchronize, and monitor PM implementation of VICTORY standards in Initial and CS18 Unit specific Architecture products. -SsP-IE: Products and Services: Direct the design and integration of current and future Army network technologies in Army vehicle systems for evaluations at NIE 16.2 and 17.1. Define platform integration requirements for CS19-22 baseline NIE evaluation; leveraging NIE technical data packages, network trend analysis, architecture, vehicle designs, platform integration challenges, strategic planning, VALEX, and SharePoint data sharing. Evaluate, synchronize and monitor the development of the final CS19-22 Reference Architectures products defined by NIE evaluation results in collaboration and coordination with SoSE&I Engineering and Integration (E&I) and the Synch Fielding (SF)-Engineering Division. Evaluate, synchronize and ensure platform integration requirements are embedded			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
in the performance scope for SoSE&I managed SUE production RFPs In collaboration and coordination with platform PMs, network system PMs and the SoSE&I Integration Planning Division. Support platform OEM design and integration activities for NIE and CS baseline events. - These funds also provide Subject Matter Expertise for contract and budget management support to NIE17.2 and NIE/Army Warfighter Assessment (AWA) 18.1. ***FY 2018 Plans:*** Overview: These funds provide for Planning, Preparation, Execution, and Close-out for two planned evaluation events (JWA 18.1 and NIE 18.2); and initial planning and procurement of long lead items for the next event (JWA 19.1). For both events, Planning, Platform Preparation, Execution and Close-out are expected to occur at the unit's home station. Required program management, engineering, and vehicle integration resources will deploy to the unit's home station to integrate network systems onto brigade platforms and validate network performance. The evaluation execution will then take place. At the conclusion of the NIE/JWA, the unit and integration team will demod platforms and return them to baseline configuration. Support listed below is common to both events unless otherwise noted and consists of the following activities. Planning: These funds provide for coordination with Training and Doctrine Command (TRADOC), Headquarters, Department of the Army G-3/5/7, and Assistant Secretary of the Army for (Acquisition, Logistics, & Technology) ASA (ALT) PEOs to align capabilities/ technologies to Focused End States (FES) for each event. Support development and implementation of Horseblanket architecture and engineering analysis of design requirements and platform Size, Weight, and Power (SWaP) constraints that may impact inclusion of proposed systems in the event architecture. Conduct detailed planning sessions ("Bullpens") to finalize system parameters and characteristics needed for platform/system engineering designs, determine and verify network accreditation status, identify supporting hardware and software requirements, finalize product delivery schedules, and synchronize the Integrated Master Schedule (IMS) with all lower tier integration schedules. These funds support planning for the network Validation Exercise (VALEX) to support the operational exercise. This effort includes developing a VALEX site plan, assigning unit locations within the VALEX location; identifying and resolving security issues associated with running classified and/or coalition network operations; validating all Information Assurance Accreditations for networked C4ISR systems, and developing of technical mission threads used to validate the network. These funds also support development of Network Architecture, Transport View, and Interconnecting Diagrams that are critical for defining the network system configurations, routing schemes, and architectures for networked systems/devices, as well as a spectrum plan to allocate and de-conflict operating frequencies. Event Preparation:			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
These funds support efforts leading up to the execution of the Evaluation exercise to include LBRR, design refinement, Bill of Material (BOM) development, Configuration Management (CM), integration material procurement and manufacturing, Golden Vehicle (GV) build, safety release, Fleet build, VALEX, management of field support representatives (FSR) and products to be evaluated. The LBRR risk reduction efforts for the NIE and AWA are conducted in controlled laboratory environment to identify and resolve integration, configuration and interoperability issues prior to the operational events. LBRR efforts use PoR hardware/software, validated communications threads, and the data products to ensure the network effectively represents the event networks. Test products delivered by the LBRR document the results of network functional testing, routing, and thread testing. These funds also provide LBRR SMEs on-site VALEX support to conduct analysis efforts designed to improve future Army networks and end states, and oversee blue/red teaming. These funds further refine the engineering design packages (drawings, diagrams, and other guides/documentation); development of Bills of Material (BOMs) needed to support integration of an estimated 3000 Command, Control, Communications, and Computer Intelligence, Surveillance, and Reconnaissance (C4ISR) systems and their A/B Kits on to approximately 250 tactical platforms; Configuration Management (CM) for the event network architecture, all platforms, systems, system of system engineering designs, A-Kits, B-Kits, and the IMS; management of the Authority to Connect (ATC) process; risk analysis for the Operational Test Network (OTN); Procurement of approximately 20,000 items (e.g., fasteners, cables, components, Prototypes (as required), and other items) needed to support NIE/AWA; and fabrication of approximately 1,000 specialized cables, metal plates, racks, and brackets to enable platform installation/integration. These funds also enable design, integration, and safety release testing of Prototype or Golden Vehicles (GV) [NIEs average 50 GVs and AWAs require approximately 25 GVs] and Fleet build of approximately 250 tactical platforms. For each event, the scope of the integration effort includes management of approximately 500 Field Service Representatives (FSRs) that support all installation teams, coordination and movement of the Fleet vehicles, inventory management of systems, instrumentation, and integration material. Following completion of platform integration efforts, these funds support a structured network VALEX consisting of four subordinate efforts: Load Exercise (LOADEX), ESTABLISH, INTEGRATE, and VALIDATE. • LOADEX; Installation of network system hard drives, operating system software, software applications, and firmware on up to 3000 systems. Set Internet Protocol (IP) addresses and configure all network systems; load and initialize radio mission plans, system configuration files and system parameters on up to 400 platforms; and perform test/fix/test processes at the system and component levels. • ESTABLISH; Verification of networked hardware and software performance at the platform level. Troubleshoot issues associated with network system configurations and verify that each integrated platform can perform its mission while operating on the network. • INTEGRATE; Verification of networked hardware/software performance and networked communications at each echelon. Troubleshoot any issues found and ensure tactical unit information exchange will enable units to support their intended missions.			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Ensure instrumentation is operational, collecting data, and storing the data as required. Provide over-the-shoulder training for Soldiers. • VALIDATE; Execution of up to 40 mission threads to verify the correct routing of messages and information transfer among critical nodes in the network. For Systems Under Test, ensure instrumentation is properly configured for capturing and logging data, enabling Army Test and Evaluation Command (ATEC) and Training and Doctrine Command (TRADOC) assessments and evaluations. Coordination with System Owners, vendors, and Joint Modernization Command (JMC) for New Equipment Training (NET) training package development/delivery and manage training for approximately 1,000 soldiers. Platform integration and VALEX efforts may encompass coordination with CS design teams. Funding will ensure equipment and network interface designs support the CS architecture; verify CS training support requirements; establish methods for informing CS design teams on issues and/or trends; address Integrated Logistics System (ILS) requirements; and capture lessons learned from After Action Reviews (AARs), Technical Reports, and Feedback on CS issues. Evaluation Event Execution: Funding supports all field operations of approximately 500 FSRs and 50 CPD personnel that provide support to the unit during the events and coordination with ATEC and TRADOC. It also includes monitoring of network operations in the field, trouble ticket management, continued LBRR support to troubleshoot technical issues, data capture and analysis, red/blue team cyber support, deployment of mobile facilities, and replacement parts/components required to effectively complete detailed evaluations. Closeout: These funds support all activities associated with the de-installation and recovery of network systems, components, A-kits, cabling installed on platforms, and restoration of platforms to baseline configurations. Removal, inspection, repair/replacement, shipping, and storing of all materiel and infrastructure used to enable the unit to execute the event. Analyze data and publish reports on how well systems performed and recommendations for future fielding. Conduct AARs for process improvements. Future Planning: These funds support efforts to provide technical input on candidate systems at the Technical Interchange Meetings, Concepts and Capabilities Review Board, and Strategic Planning Reviews for future events. Funding also supports Network SoS performance analyses of future CS reference architectures, performance validation, predictive analysis (to include operational impact assessment of the proposed architectural COAs), sustainment improvement analysis; and assessments of Position, Navigation and Timing (PNT), Cyber, Electronic Warfare solutions performance.			
Title: Infrastructure and other support	-	0.885	2.461
Description: Provides for setup, utilities, furniture, equipment and maintenance (of all equipment and facilities) used by SoSE&I (CPD) in support of Network Integration Evaluations (NIE) and Joint Warfighting Assessments (JWA).			
FY 2017 Plans:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Provides for setup, utilities, furniture, equipment and maintenance (of all equipment and facilities) used by SoSE&I in support of Integrated Evaluation. Includes lease and support maintenance contracts for Government Service Administration (GSA) vehicles, IT equipment and support and facilities support closing-out NIE/AWA 16.1, planning, conducting and closing-out NIE17.2, planning and conducting NIE/AWA 18.1 and planning for NIE18.2 at FBTX/WSMR. ***FY 2018 Plans:*** Provides for setup, utilities, furniture, equipment and maintenance (of all equipment and facilities) used by SoSE&I (CPD) in support of Network Integration Evaluations (NIE) and Joint Warfighting Assessments (JWA). It includes lease and support maintenance contracts for Government Service Administration (GSA) vehicles, IT equipment/support and facilities to support NIEs and JWAs.			
Accomplishments/Planned Programs Subtotals	10.768	65.844	58.395

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• DY4: *Network Integration Support*	13.700	-	-	-	-	-	-	-	-	0.000	13.700
• DY5: *Production/Fielding Coordination for Capability Sets*	3.486	3.960	4.261	-	4.261	4.349	4.434	4.524	4.502	Continuing	Continuing
• DY6: *Brigade and Platform Integration Support*	44.164	-	-	-	-	-	-	-	-	0.000	44.164
• DY7: *Army Systems Engineering, Architecture and Analysis*	15.802	14.166	15.508	-	15.508	15.998	25.121	25.499	26.214	Continuing	Continuing
• DZ6: *Army Integration & Coordination Management*	8.366	5.746	6.775	-	6.775	6.922	7.065	7.217	7.367	Continuing	Continuing
• FG7: *Emerging Technology Initiatives*	-	56.939	60.421	-	60.421	39.991	39.985	35.995	41.020	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project includes competitive contracts for test support services. Additional competitive contracts are awarded by Defense Information Systems Agency (DISA) for satellite support.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army		Date: May 2017
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Core Government Labor	Allot	SoSE&I : Various	0.000	-		-		4.056		-		4.056	Continuing	Continuing	0.000
Matrix Government Labor	MIPR	SoSE&I : Various	0.000	-		-		3.331		-		3.331	Continuing	Continuing	0.000
MITRE Labor	FFRDC	MITRE : Various	0.000	-		-		1.820		-		1.820	Continuing	Continuing	0.000
Contractor SETA Labor	C/CPFF	TBD : Various	0.000	-		-		5.620		-		5.620	Continuing	Continuing	0.000
Temporary Duty (TDY)	Allot	SoSE&I : Various	0.000	-		-		1.000		-		1.000	Continuing	Continuing	0.000
		Subtotal	0.000	-		-		15.827		-		15.827	-	-	0.000

Remarks

- Program Activities performed at Aberdeen Proving Grounds (MD), FT Bliss (TX), White Sands Missile Range (NM) and the selected NIE/JWA unit's home station.
- Other NIE/JWA subject matter expertise support provided using existing Army contracts managed by PEO C3T, ATEC, and CERDEC.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Evaluations	Various	Various : TBD	0.000	-		62.959	Nov 2016	-		-		-	0.000	62.959	0.000
		Subtotal	0.000	-		62.959		-		-		-	0.000	62.959	0.000

Remarks

- Program Activities performed, Aberdeen Proving Grounds (MD), FT Bliss (TX), White Sands Missile Range (NM) and the selected NIE/JWA unit's home station.
- Vehicle Integration performed under contract W56HZV-15-D-ER03 by BRTRC and other NIE/JWA support provided using existing Army contracts managed by PEO C3T, ATEC, and CERDEC.
- Includes support services from DISA (for satellite time) and other governments agencies

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Support Costs	C/TBD	TBD : Various	7.385	4.200	Nov 2015	-		-		-		-	0.000	11.585	0.000
Vehicle Integration	C/CPFF	BRTRC : Various	0.000	-		-		12.000		-		12.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army		Date: May 2017
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Network Integration and Baseline Systems	MIPR	PEO C3T : Various	0.000	-		-		10.000		-		10.000	Continuing	Continuing	Continuing
Infrastructure and other support	TBD	TBD : Various	0.000	-		2.885	Nov 2016	5.000		-		5.000	Continuing	Continuing	Continuing
		Subtotal	7.385	4.200		2.885		27.000		-		27.000	-	-	-

Remarks

- Program Activities performed at Aberdeen Proving Grounds (MD), FT Bliss (TX), White Sands Missile Range (NM) and the selected NIE/JWA unit's home station.
- Vehicle Integration performed under contract W56HZV-15-D-ER03 by BRTRC.
- Network Integration and Baseline Systems subject matter expertise support provided using existing Army contracts managed by PEO C3T and its subordinate Program Managers (PMs).

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ATEC Test and Evaluation Support	MIPR	ATEC : Various	11.549	6.568	Nov 2015	-		3.500		-		3.500	Continuing	Continuing	Continuing
Lab Based Risk Reduction (LBRR)	MIPR	CERDEC : APG, MD	0.000	-		-		5.300		-		5.300	Continuing	Continuing	Continuing
Satellite Region Hub Node (RHN) Technical Support	MIPR	Cyber Battle Lab : Ft. Gordon, GA	0.000	-		-		2.339		-		2.339	Continuing	Continuing	Continuing
Satellite Transponder Bandwidth	MIPR	DISA : Various	0.000	-		-		2.500		-		2.500	Continuing	Continuing	Continuing
Cyber Vulnerability/Risk Assessments	MIPR	Army Research Laboratory : Various	0.000	-		-		0.700		-		0.700	Continuing	Continuing	Continuing
Systems Under Evaluation (SUEs)	C/Various	TBD : Various	0.000	-		-		1.229		-		1.229	Continuing	Continuing	Continuing
		Subtotal	11.549	6.568		-		15.568		-		15.568	-	-	-

Remarks

- Program Test support through ATEC, Lab Based Risk Reduction through CERDEC, and Cyber Vulnerability/Risk Assessments through Army Research Laboratory (ARL).
- Satellite RHN Technical Support provided by the Cyber Battle Lab at Fort Gordon, GA and Satellite Transponder Bandwidth contracted through DISA.

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
- Program Activities performed at Aberdeen Proving Grounds (MD), FT Bliss (TX), White Sands Missile Range (NM) and the selected NIE/JWA unit's home station.															

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.934	10.768		65.844		58.395		-		58.395	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

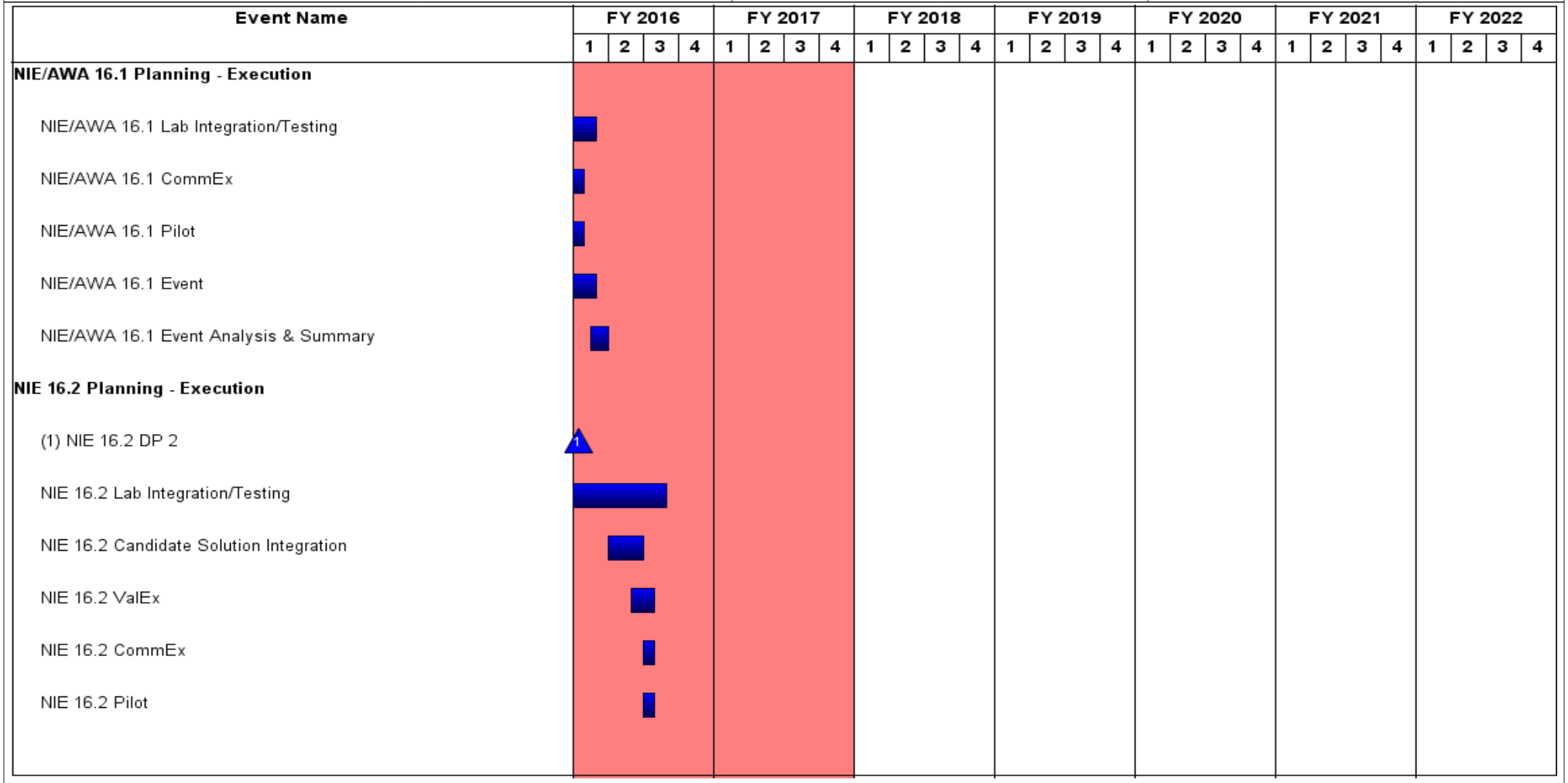

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

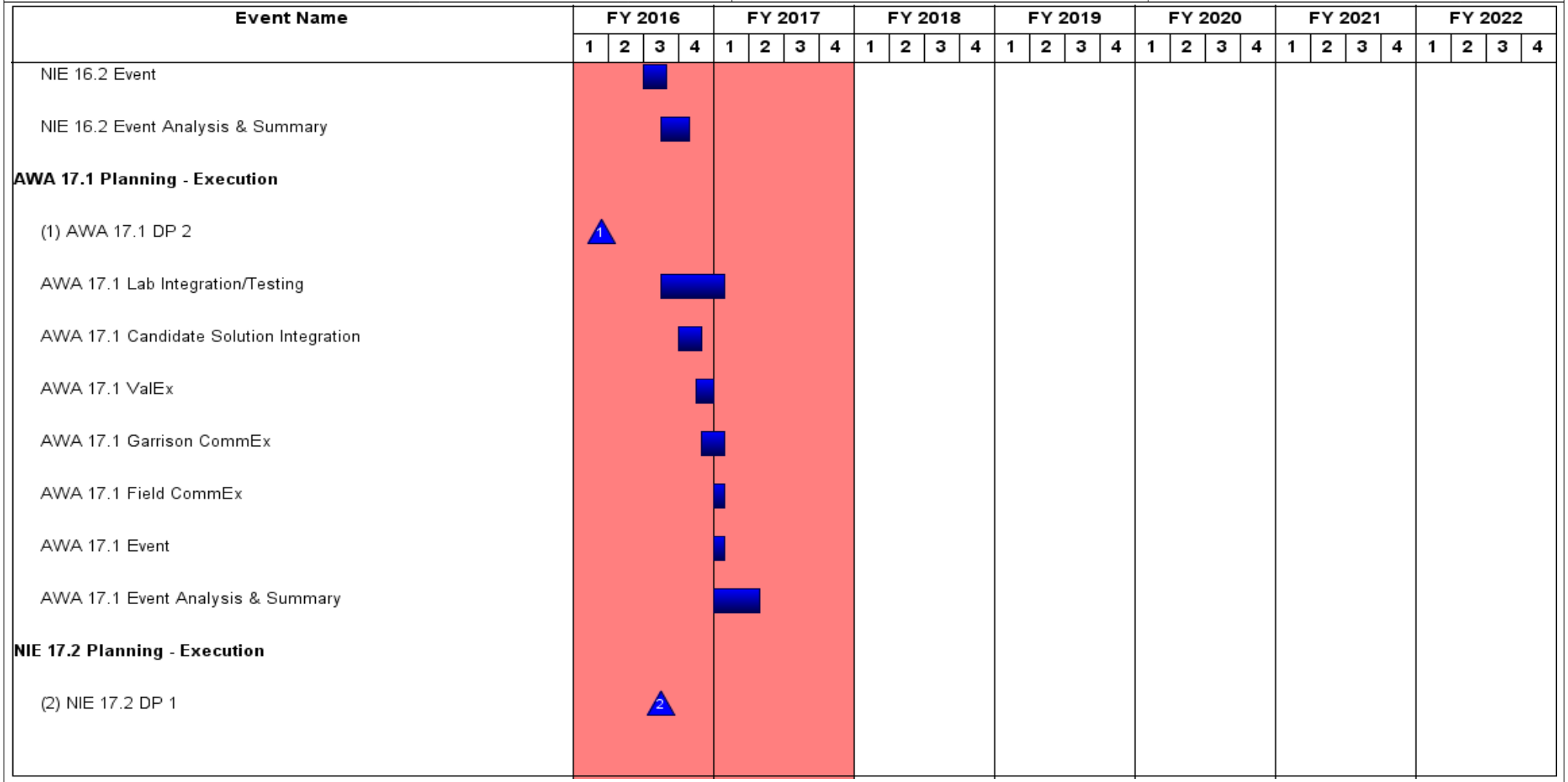

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

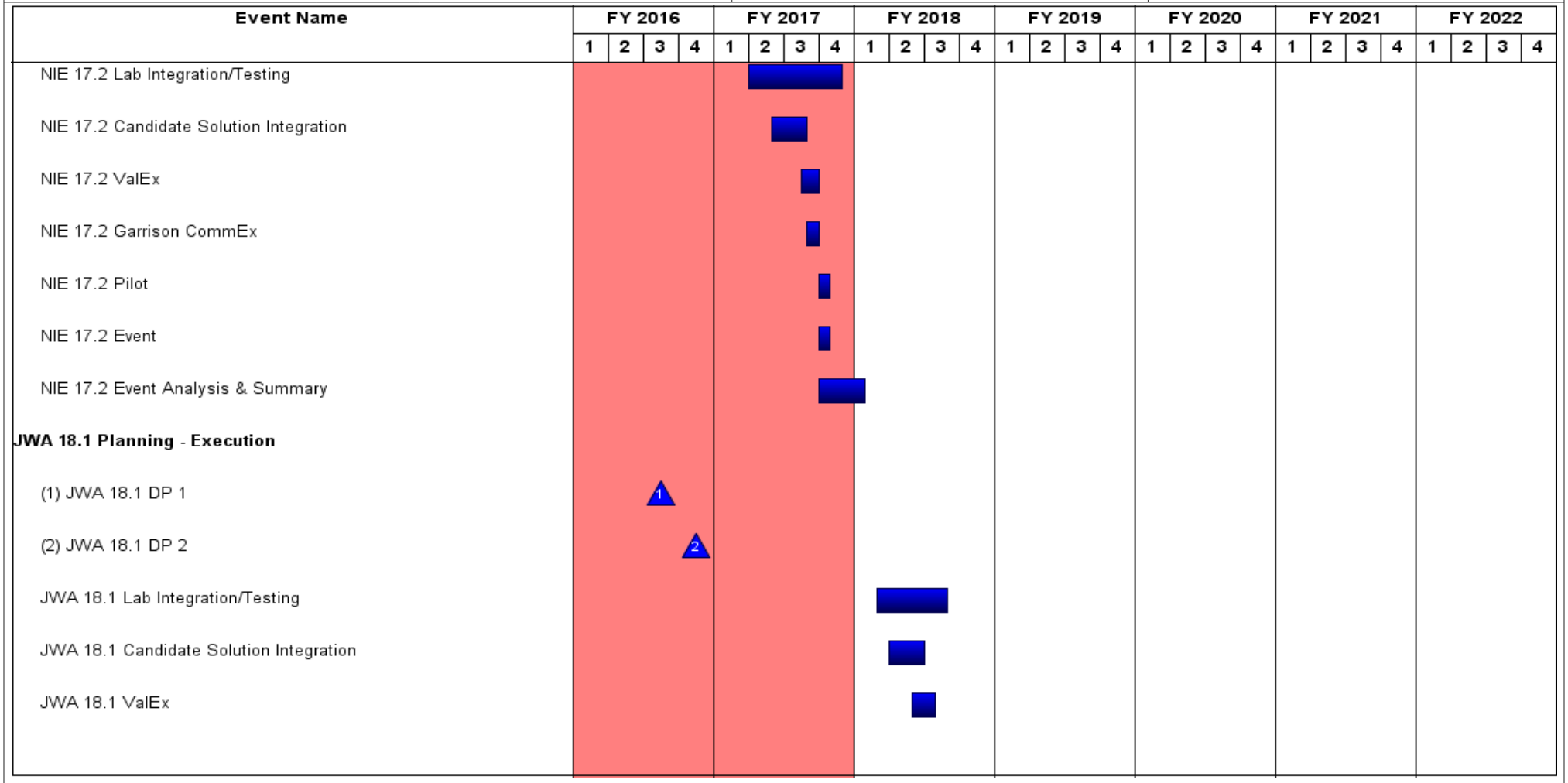

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

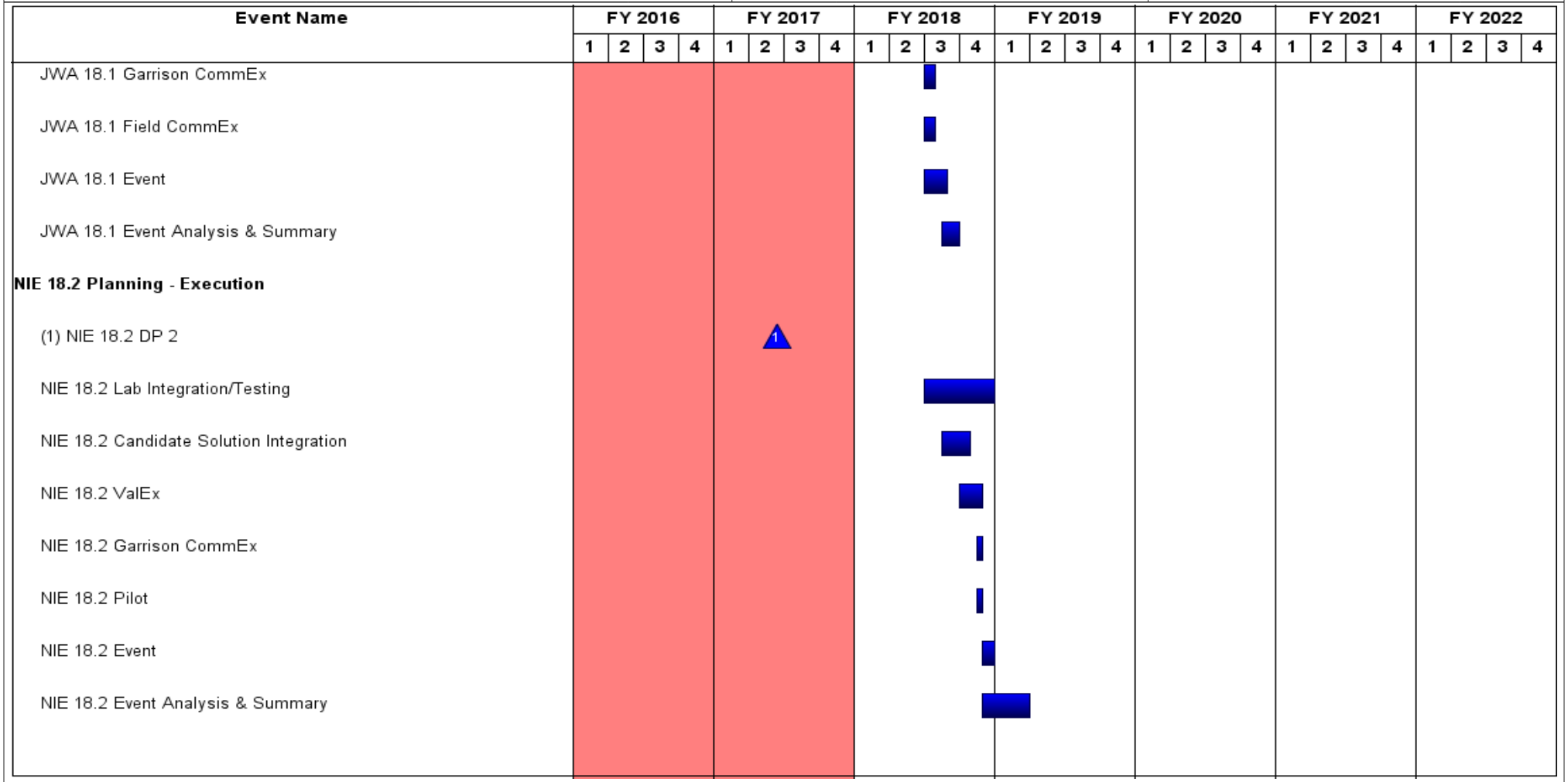

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

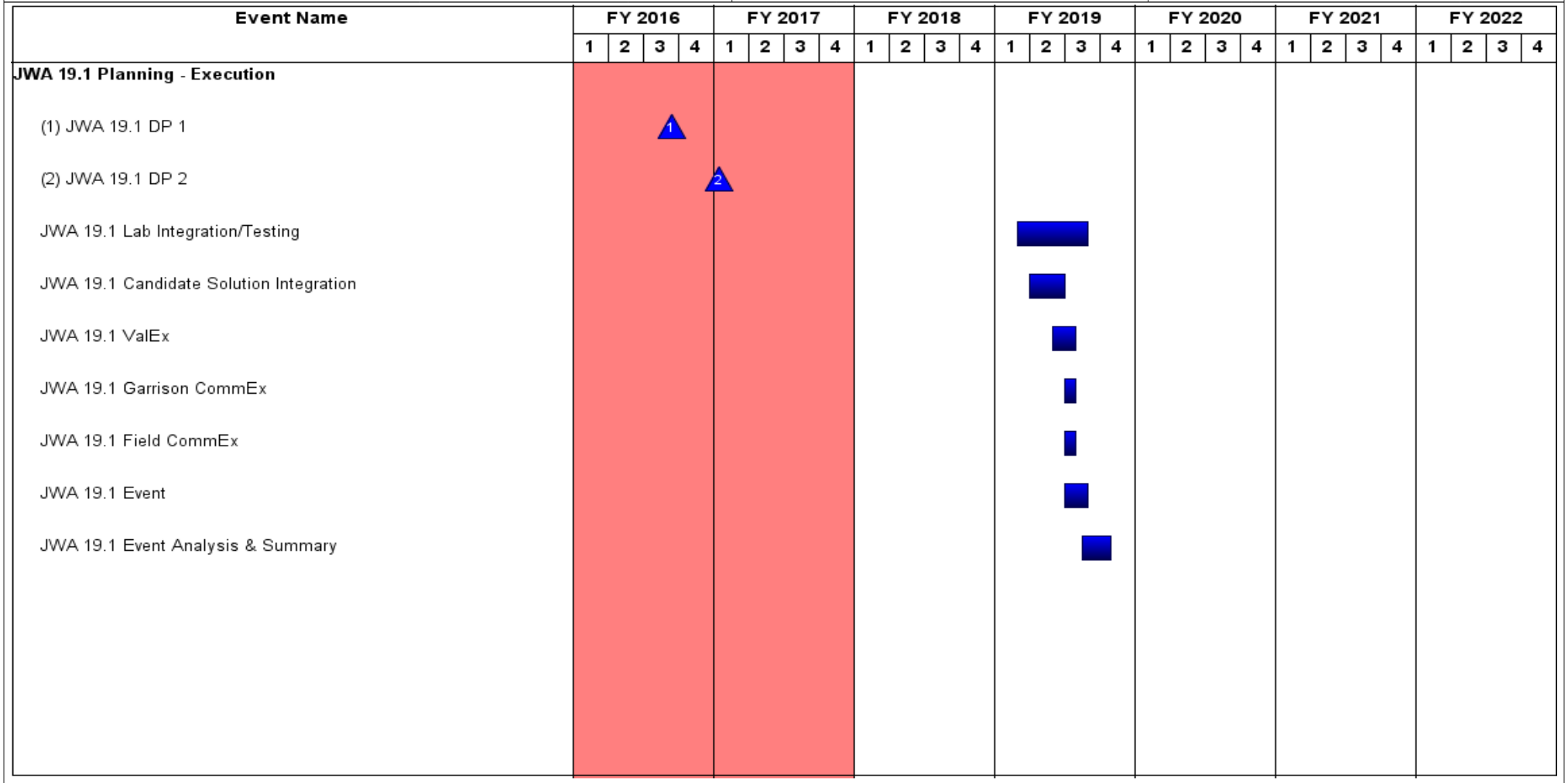

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NIE/AWA 16.1 Planning - Execution	3	2014	1	2016
NIE/AWA 16.1 Lab Integration/Testing	3	2015	1	2016
NIE/AWA 16.1 CommEx	4	2015	1	2016
NIE/AWA 16.1 Pilot	1	2016	1	2016
NIE/AWA 16.1 Event	1	2016	1	2016
NIE/AWA 16.1 Event Analysis & Summary	1	2016	1	2016
NIE 16.2 Planning - Execution	3	2015	4	2016
NIE 16.2 DP 2	1	2016	1	2016
NIE 16.2 Lab Integration/Testing	1	2016	3	2016
NIE 16.2 Candidate Solution Integration	2	2016	2	2016
NIE 16.2 ValEx	2	2016	3	2016
NIE 16.2 CommEx	3	2016	3	2016
NIE 16.2 Pilot	3	2016	3	2016
NIE 16.2 Event	3	2016	3	2016
NIE 16.2 Event Analysis & Summary	3	2016	4	2016
AWA 17.1 Planning - Execution	3	2015	2	2017
AWA 17.1 DP 2	1	2016	1	2016
AWA 17.1 Lab Integration/Testing	3	2016	1	2017
AWA 17.1 Candidate Solution Integration	4	2016	4	2016
AWA 17.1 ValEx	4	2016	4	2016
AWA 17.1 Garrison CommEx	4	2016	1	2017
AWA 17.1 Field CommEx	1	2017	1	2017

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AWA 17.1 Event	1	2017	1	2017
AWA 17.1 Event Analysis & Summary	1	2017	2	2017
NIE 17.2 Planning - Execution	3	2016	1	2018
NIE 17.2 DP 1	3	2016	3	2016
NIE 17.2 Lab Integration/Testing	2	2017	4	2017
NIE 17.2 Candidate Solution Integration	2	2017	3	2017
NIE 17.2 ValEx	3	2017	3	2017
NIE 17.2 Garrison CommEx	3	2017	3	2017
NIE 17.2 Pilot	4	2017	4	2017
NIE 17.2 Event	4	2017	4	2017
NIE 17.2 Event Analysis & Summary	4	2017	1	2018
JWA 18.1 Planning - Execution	3	2016	3	2018
JWA 18.1 DP 1	3	2016	3	2016
JWA 18.1 DP 2	4	2016	4	2016
JWA 18.1 Lab Integration/Testing	1	2018	3	2018
JWA 18.1 Candidate Solution Integration	2	2018	2	2018
JWA 18.1 ValEx	2	2018	3	2018
JWA 18.1 Garrison CommEx	3	2018	3	2018
JWA 18.1 Field CommEx	3	2018	3	2018
JWA 18.1 Event	3	2018	3	2018
JWA 18.1 Event Analysis & Summary	3	2018	3	2018
NIE 18.2 Planning - Execution	2	2017	1	2019
NIE 18.2 DP 2	2	2017	2	2017
NIE 18.2 Lab Integration/Testing	3	2018	4	2018
NIE 18.2 Candidate Solution Integration	3	2018	4	2018

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY3 / *NIE Test & Evaluation*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NIE 18.2 ValEx	4	2018	4	2018
NIE 18.2 Garrison CommEx	4	2018	4	2018
NIE 18.2 Pilot	4	2018	4	2018
NIE 18.2 Event	4	2018	4	2018
NIE 18.2 Event Analysis & Summary	4	2018	1	2019
JWA 19.1 Planning - Execution	3	2016	4	2019
JWA 19.1 DP 1	3	2016	3	2016
JWA 19.1 DP 2	1	2017	1	2017
JWA 19.1 Lab Integration/Testing	1	2019	3	2019
JWA 19.1 Candidate Solution Integration	2	2019	2	2019
JWA 19.1 ValEx	2	2019	3	2019
JWA 19.1 Garrison CommEx	3	2019	3	2019
JWA 19.1 Field CommEx	3	2019	3	2019
JWA 19.1 Event	3	2019	3	2019
JWA 19.1 Event Analysis & Summary	3	2019	4	2019

Note

-With the loss of a dedicated unit (2/1 Armored Division), NIE/AWA event planning and a unit requirements determination has to be made earlier than in previous FYs to allow Forces Command (FORSCOM) time to select the unit participating in the test events.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / *Brigade Analysis, Integration and Evaluation*	Project (Number/Name) DY4 / *Network Integration Support*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
DY4: *Network Integration Support*	-	13.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.700
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Beginning in FY 2017, the mission requirements and the funding have been moved to DY3; NIE Test & Evaluation to increase transparency.

A. Mission Description and Budget Item Justification

This project supports Phases I through IV of the Army's Agile process. Phase I solicits potential solutions from existing Army programs, tech base programs, and industry to deliver capabilities that achieve the Army's Network 2020 Endstates and Objectives and Forces 2025 beyond. It establishes initial objectives, solidifies the architecture baseline and will establish a viable candidate list for Network Integration Evaluation (NIE). During Phase II, the project supports the compilations of potential solutions that could meet the Army's Mission Command gaps and the US Army Training and Doctrine Command (TRADOC) identified gaps which supports the development of integration and testing concepts for the NIE. Phase III includes the coordinated efforts between System of Systems Integration (SOSE&I), Brigade Modernization Command (BMC) at Ft Bliss and the Army Test and Evaluation Command (ATEC) to finalize the brigade architecture "horseblanket", integration and test planning, training requirements and combat mission evaluations. Phase III also includes the initial integration phase where Systems Under Test (SUT) and government/ industry System Under Evaluation (SUE) hardware and software are integrated and initially evaluated for follow-on consideration at Aberdeen Proving Ground's (APG) Communications Electronics Research, Development and Engineering Center (CERDEC) labs through the Lab Based Risk Reduction (LBRR) process. This project provides for Network Integration of all SUTs and SUEs (industry and/or government) Hardware/Software into existing CERDEC System Integration Laboratories at APG to risk reduce evaluation architectures, network configurations and identify integration issues prior to NIE. This effort continues into Phase IV as the network matures and becomes functional in the Lab. The results of this detailed lab based testing/evaluations will determine which SUTs and industry/government SUEs will continue in the NIE (Phases IV/V of the Army's Agile Network Integration process) and establishes the initial Network configuration that will be used in NIE. LBRR also reduces risk to NIE execution by testing the Network in the lab, resolving issues found in the Network lab test and optimizing the Networks performance. This is done in a lab environment that facilitates very efficient, cost effective determination of problems, and their subsequent corrections.

Additionally this project will integrate the Network at the CERDEC labs facilitate participation by small businesses and interfaces and integrate with Government Programs of Record with unique military secure interfaces and protocols. Purchase of any additional hardware and support above and beyond the proposed or available support if required for Lab Based Risk Reduction is also funded within this project. For Government SUEs, this project funds integration support at the CERDEC Labs. If the NIE program requires additional prototypes above and beyond the Program of Record for the Lab based Risk Reduction, it will also purchase this equipment. This project also funds keeping the Network baseline up to date so that integration is always into the current baseline network.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: NIE Network Integration and Lab Based Risk Reduction	8.081	-	-

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY4 / *Network Integration Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Description: These funds provide for the following: Network Integration of all industry and government SUEs, SUTs, and baseline Hardware/Software into existing CERDEC System Integration Laboratories at Aberdeen Proving Grounds (APG) to simulate the Brigade Network for NIE and determine if SUE's capabilities successfully resolve known gaps. ***FY 2016 Accomplishments:*** The funding provided for the Lab Based Network Analysis and evaluations for NIE 16.2 and AWA 17.1 network assessing the technical feasibility of 76 capabilities for participation in the LBRR and event execution. In the CERDEC labs, engineers created a representative NIE/AWA network architecture incorporating radios, satellite-based systems, handheld devices, mission command applications, routers, software, cables and other network components. Through a combination of actual and emulated hardware and software they modeled the end-to-end network, allowing industry and government organizations the ability to "plug" their systems into the architecture for early assessment and integration risk mitigation. The lab activity validated the NIE/AWA network architecture products and network configurations using a Brigade-scale network consisting of a mixture of live and virtualized hardware and software. Products included plans/execution/reports of the following: system level specification verification, instrumentation verification, pre-event analysis, Network Integration Requirements Levels, Measures of Performance, communication load plan, automated performance assessment of technical, configuration control, transport and software basis of issue, instrumentation plan, field troubleshooting and reach back support during event execution, routing design for NIE/AWA, and technical input to the reports to industry of system performance and issues.			
Title: NIE and LBRR Requirements Definition Support	3.852	-	-
Description: These funds provide for all government and contract personnel and equipment which work with TRADOC and Army G-3/5/7 to finalize the architecture, requirements, and horseblanket for each NIE/AWA. ***FY 2016 Accomplishments:*** Planned and coordinated with multiple stakeholders (TRADOC, G-3/5/7, and ASA(ALT) PEOs) to finalize the operational gaps and develop sources sought, or government technical call to select industry and government SUEs to participate in NIE 16.2 and AWA 17.1. This also included the development, evaluation and down-select criteria and evaluation of sources sought, government technical calls proposals. This effort included management of the down-selections for each event, development and delivery of the final implementation horseblanket architecture and design for the NIE and AWA. It also included all program information, security, business, schedule, personnel management, network integration, evaluation, and reporting efforts required to support phases I-III			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY4 / *Network Integration Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
of the Agile process. This effort also included the management and implementation of phase VI system recommendations across the ASA(ALT) PEO communities.			
Title: NIE SUE Hardware/Software for Lab & FSR Support for Network Integration ***Description:*** The effort includes procurement of Hardware and Software required by the Lab to fully simulate the Brigade Network it includes the FSR Support from Contractors to fully integrate their systems into the Network. ***FY 2016 Accomplishments:*** Provided funding to support Network integration and evaluation at the CERDEC Lab at APG. This supported network integration of technologies which were being selected for participation into the Army's NIE 16.2 & AWA 17.1. These funds covered participation in the lab integration event including contractor's costs for travel, shipment of equipment, Contractor Field Service Representatives (CFSRs) required to support Network integration activities, and the purchase of additional prototypes if required for the CERDEC Lab to effectively complete detailed evaluations of the complete brigade network architecture.	1.195	-	-
Title: Facilities and IT Support ***Description:*** Provides funding for infrastructure/facilities and IT support. ***FY 2016 Accomplishments:*** Provided funding for infrastructure/facilities. In addition it included the cost for IT support from network connectivity for purchasing/ leasing hardware, software, computers, communications equipment and services for the government staff.	0.572	-	-
Accomplishments/Planned Programs Subtotals	13.700	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• DY3: *NIE Test & Evaluation*	10.768	65.844	58.395	-	58.395	61.482	49.699	45.735	50.051	Continuing	Continuing
• DY5: *Production/Fielding Coordination for Capability Sets*	3.486	3.960	4.261	-	4.261	4.349	4.434	4.524	4.502	Continuing	Continuing
• DY6: *Brigade and Platform Integration Support*	44.164	-	-	-	-	-	-	-	-	0.000	44.164
• DY7: *Army Systems Engineering, Architecture and Analysis*	15.802	14.166	15.508	-	15.508	15.998	25.121	25.499	26.214	Continuing	Continuing
• DZ6: *Army Integration Management & Coordination*	8.366	5.746	6.775	-	6.775	6.922	7.065	7.217	7.367	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY4 / *Network Integration Support*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• FG7: *Emerging Technology Initiatives*	-	56.939	60.421	-	60.421	39.991	39.985	35.995	41.020	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project does not have any requirement for direct procurement of hardware or software.

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / *Brigade Analysis, Integration and Evaluation*	Project (Number/Name) DY5 / *Production/Field Coordination for Capability Sets*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
DY5: *Production/Field Coordination for Capability Sets*	-	3.486	3.960	4.261	-	4.261	4.349	4.434	4.524	4.502	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for the development of a synchronized Brigade/Division level plan for the Production equipment delivery and Fielding (hand-off logistics and new equipment training) of Capability Set (CS) components (both hardware/software in A and/or B Kits) upon completion of Network Integration Evaluation (NIE), Army Interoperability Certification (AIC) and Army CS fielding decision.

This project includes the following efforts: Oversight and direct coordination between participating Program Executive Offices (PEOs), Program Managers (PMs), Research, Development and Engineering Commands (RDECOMs) and the Army's Brigade Combat Teams (BCT) throughout the CS Vehicle Integration and Synchronized Fielding process to ensure that a CS package is received, integrated, trained, and handed-off to the unit in a synchronized and efficient manner. Identification and assessment of available capabilities for inclusion into a CS. Alignment of the CS requirements with the appropriate Programs of Record (PoR) and the recipient unit to define the unit's Network Basis of Issue (NBOI)/ Architecture by type of BCT. Coordination with PEOs, PMs, Army G-staff to ensure CS products are Materiel Released/Type Classified, fully resourced and synchronized by a single Integrated Master Schedule for design integration, testing, production, kitting, platform integration, training and fielding. Direct support during each of the unit's "New Equipment Training" and "New Equipment Fielding", along with the preparation for the BCT's rotation through one of the Army's Combat Training Centers, (Joint Readiness Training Center (JRTC) or National Training Center (NTC)). Ensuring that all training assets are reset and moved to the follow-on BCT. Manage all After Action activities.

This project does not fund the actual production, integration, nor fielding costs associated with the CS.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Production/Fielding Coordination for Capability Sets (CS)	3.252	3.960	4.261
Description: These funds provide for the following: Development, coordination and execution management of the CS Fielding Plan needed to deliver and train a set of capabilities in an integrated manner to minimize impact to the unit's operational requirements. This effort funds planning and coordination of resources, integrated schedule, training, and fielding across CS Programs of Record (PoR). Provides integrated system identification documents to the gaining unit for ease of property transfer in Property Book Unit Supply Enhanced (PBUSE). Provides integrated coordination of facilities across all fielding activities to efficiently synchronize facility requirements linked to the IMS for all PMs with garrison support activities. Coordinate standard transfer processes for all PMs to reduce the complexity and administrative burden on the gaining units. Synchronize fielding planning to include synchronized production deliveries, NET, fielding and support (with sponsoring PMs) to execute within the specified System Readiness Model (SRM) windows. Synchronizes, integrates, and coordinates the execution of LTI on 700+ Brigade platforms. Coordinates the set up and execution of the two each production lines for each LTI installation			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY5 / *Production/Field Coordination for Capability Sets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
including coordination of the unit for platforms to maintain efficient throughput of systems. Plan synchronization, integration, and coordination of CS Fielding. Plan a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for CS gaining units. Provides strategic guidance and priorities, establish organizational goals, develop plan to achieve strategic Army BCT network modernization goals and management of Fielding Integration and Engineering Integration Divisions, CS Scheduler, and Trail Boss team. Coordinate and synchronize funding between PEOs that affect engineering architecture data products, training packages, and logistics packages to meet System of Systems integration requirements. Provide strategic guidance for fielding integration support teams, in coordination with over 35 PMs and various Army stakeholders, to enable a successful network through CS Fielding as well as modernization of the Army BCT formation network systems into a fully-integrated network. Conduct synchronization and execution of all new equipment training and fielding integration activities to include LTI integration, CS Synchronization meetings, New Materiel Introductory Briefings and Rehearsal of Concepts drills. Conduct coordination, development, integration, synchronization and execution of the New Equipment Training, New Equipment Fielding (NET/NEF) and LTI comprehensive schedule that puts the unit on a glide path to successfully train and operate a more robust Network Capability. Note: It does not fund the production, physical integration, or fielding of the CS. ***FY 2016 Accomplishments:*** Synchronized, integrated and coordinated Capability Set Fielding for CS-16 and initiated detailed planning for CS-17 and high level planning for CS18/19. • Synchronized integration of BCT Reference architectures consisting of multiple network systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at multiple locations; • Integrated designs by platform, by role, by echelon, and by BCT for CS16 including LTI. • Finalized CS-16 requirements, developed and coordinated the Integrated Master Schedule (IMS) for CS-16; • Coordinated A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between system and platforms PEOs and PMs for CS16. • Coordinated and delivered prototype and production builds for CS16 • Configuration Management (CM) of Platform Architectural implementations, designs, A-Kits, B-Kits, and the IMS for CS16. • Coordinated fielding integration of Program of Record assets in accordance with the defined BCT Reference architecture consisting of multiple systems, on multiple configurations of STRYKER, MRAPS, and HMMWV platforms, at several different locations, integrated into multiple gaining Army Units. • Coordinated a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS-16 to all gaining units. This included 1 Division HQ, 5 IBCTs and 1 SBCT. • Completed NET by platforms, by role, by echelon, and by BCT.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY5 / *Production/Field Coordination for Capability Sets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
• Began CS-17 NET/NEF requirements definition finalization and development of the NET/NEF integrated master schedule. This includes scheduling Program of Record unique NET, System of Systems NET (Capability Set holistic classes), and property accountability handoffs as an integrated process to enhance efficiency of the brigade modernization events. • Provided integrated system identification documents to the gaining unit for ease of property transfer in PBUSE/GCSS-Army. • Provided integrated management of facilities across all fielding activities to efficiently manage facilities requirements linked to the Integrated Master Schedule for all PMs with garrison support activities. • Coordinated standard transfer processes for all PMs to reduce the complexity and administrative burden on the gaining units. Synchronized fielding planning to include synchronized production deliveries, NET, fielding and support (with sponsoring PMs) to execute within the specified Sustainment Readiness Model windows. • Synchronized, integrated and coordinated execution of Lower Tactical Internet (LTI) on 700+ platforms for each of two (2) IBCTs. . Coordinated the set up and execution of the 3ea production lines for each LTI installation including coordination of the unit for platforms to maintain efficient through put of systems. • Coordinated funding requirements and delivery/production schedules to ensure production schedules are met to field selected systems. • Completed funding coordination with DA and prioritized requirements at Weapons Systems Reviews (WSR). • Aligned funding requirements for PMs to make updates to their PORs as a result of integrating concepts that affect engineering architecture data products, training packages, logistics packages, etc.			
FY 2017 Plans: These funds provide for the following: - Production/Fielding Coordination for Capability Sets (P/FC-CS): Development, coordination and execution of the CS Fielding plan to take the results of previous NIEs and produce, integrate, and field these Brigade improvements to the BCTs and synchronize, integrate and coordinate Capability Set Fielding for CS16 closeout, CS-17 execution, detailed planning for CS-18 and high level planning for CS19/20. This effort does not fund the production, or integration, or fielding of the capability set, but it does fund the coordination of this activity for the Army through the supporting Program Managers (PMs), Program Executive Officers (PEOs), and Research, Development, Engineering Command (RDECOMs). - P/FC-CS: CS16 Products and Services: Final close out of Materiel Fielding documentation and After Action Reports (AARs) for (1) Total Army Analysis (TAA) Infantry Brigade Combat Team (IBCT) with Lower Tactical Internet (LTI), (3) TAA IBCTs and (1) Division (DIV) Headquarters (HQ). - P/FC-CS: CS17 Products and Services:			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY5 / *Production/Field Coordination for Capability Sets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Synchronize integration of Brigade Combat Team (BCT) consisting of multiple network systems, on multiple configurations of Stryker, Mine Resistant Ambush Protected (MRAPs), High Mobility, Multipurpose Wheeled Vehicle (HMMWV) and Heavy Armor vehicle platforms, at multiple locations; complete synchronization, integration and coordination execution of Capability Set fielding for the following CS17 Units ((45) Total): (2) Total Army Analysis (TAA) 2020 IBCTs with Lower Tactical Internets (LTIs), (1) TAA IBCT, (1) Division Headquarters (HQ) and (1) TAA Stryker Brigade Combat Team (SBCT). Coordinate the integrated designs by platform, by role, by echelon, and by BCT for CS17 including LTI; finalize CS-17 fielding requirements and execute the Integrated Master Schedule (IMS) for CS-17; coordinate A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between system and platforms Program Executive Offices (PEOs) and Program Managers (PMs) for CS17; coordinate and deliver prototype and production builds for CS17; support Configuration Management (CM) of platform configuration implementations, designs, A-Kits, B-Kits, and the IMS for CS17; coordinate fielding integration of Program of Record (POR) assets in accordance with the defined BCT Reference architecture consisting of multiple systems, on multiple configurations of Stryker, MRAPS, HMMWV and Heavy Armor vehicle platforms, at several different locations; integrated into multiple gaining Army Units; and coordinate and publish a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS-17 to all gaining units. - P/FC-CS: Provides integrated system identification documents to the gaining unit for ease of property transfer in Property Book Unit Supply Enhanced (PBUSE): provides integrated coordination of facilities across all fielding activities to efficiently synchronize facility requirements linked to the IMS for all PMs with garrison support activities; coordinate standard transfer processes for all PMs to reduce the complexity and administrative burden on the gaining units; synchronize fielding planning to include synchronized production deliveries, NET, fielding and support (with sponsoring PMs) to execute within the specified Army Force Generation (ARFORGEN) windows. Synchronizes, integrates and coordinates the execution of LTI on 700+ platforms for each of two (2) IBCTs in FY17: coordinates the set up and execution of the 2 each production lines for each LTI installation including coordination of the unit for platforms to maintain efficient throughput of systems; plan synchronization, integration and coordination of Capability Set fielding for the following CS18 Units ((7) Total): (1) IBCT with JBC-P (Army National Guard (ARNG)), (1) ARNG Division HQ, (2) IBCT Division HQ and (3) TAA IBCTs; coordinate and publish a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Materiel Fielding Plan (MFP) for fielding of CS-18 to all gaining units; plan a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS-18 to all gaining units. - P/FC-CS: Provides strategic guidance and priorities, establish organizational goals, develop plan to achieve strategic Army BCT network modernization goals and management of Fielding Integration and Engineering Integration Divisions, CS Scheduler, and Trail Boss team; coordinate and synchronize funding between PEOs that affect engineering architecture data products, training packages, and logistics packages to meet System of Systems integration requirements; provide strategic guidance for fielding integration support teams, in coordination with over 35 PMs and various Army stakeholders, to enable a successful network			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
through Capability Set (CS) fielding as well as modernization of the Army BCT formation network systems into a fully-integrated network; synchronization and execution of all new equipment training and fielding integration activities to include Lower Tactical Internet integration, CS Synchronization meetings, New Materiel Introductory Briefings and Rehearsal of Concepts drills; conduct coordination, development, integration, synchronization and execution of the New Equipment Training, New Equipment Fielding (NET/NEF) and LTI comprehensive schedule that puts the unit on a glide path to successfully train and operate a more robust Network Capability; overall Conduct coordination, synchronization and execution of the New Equipment Training comprehensive schedule; and start planning for fielding to (1) Army National Guard IBCT and (1) Army National Guard Division in FY18-19. - P/FC-CS: CS18 Products and Services: Conduct synchronization, and coordination of Capability Set fielding for the following CS18 Units ((7) Total): (1) IBCT with LTI (Army National Guard (ARNG)), (1) ARNG Division HQ, (2) IBCT Division HQ and (3) TAA IBCTs; execute a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS-18 to all gaining units; begin CS-18 NET/NEF requirements definition finalization and development of the NET/NEF integrated master schedule. This includes logically scheduling Program of Record unique NET, System of Systems NET (Capability Set holistic classes), and property accountability handoffs as an integrated process to enhance efficiency of the brigade modernization events. - Integration Engineering Planning and Execution of Capability Sets: (IEP&E-CS) These funds provide for the advance collaboration and coordination with platform and network system Program Managers (PMs) to ensure Capability Set (CS) fielding platform integration design decisions are based on CS Reference Architecture products for CS16-22 to be evaluated in Network Integration Evaluation (NIE) events: develop the Unit-specific architecture (e.g., Integrated Network Basis of Issue (IBOI), Unit Transport Design (TD), etc.) for CS fieldings. Develop, synchronize, integrate and coordinate CS architecture design and test for CS-16 closeout, CS-17, detailed planning for CS-18 and high level planning for CS19-21; engineering coordination with platform and equipment integrators to ensure component through platform level integrated design meets requirements established in the Unit IBOIP; ensure the integrated architecture design is verified and functional. Develop the unit integration design and configuration for CS-16 closeout, CS-17, detailed planning for CS-18 and high level planning for CS19-21. Update and transition architecture products to stakeholders by utilizing Unit specific IBOIPs based on property book/ maintenance analysis and physical inventory comparisons of Forces Command (FORSCOM) assets; assess, synchronize and status production and installation CS Engineering products and processes for platform integration and installation at integration facilities meet delivery schedules; and document and continuously improve engineering activities and process flows for efficiencies. - IEP&E-CS: CS17 Products and Services: Synchronize and monitor platform and network system Size, Weight and Power (SWaP) assessment of Unit specific Architectures in collaboration and coordination with platform and network system PMs; coordinate NRE funding requirements and delivery/			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
production schedules with the Synch Fielding – Fielding team to ensure production schedules are met to field selected systems; develop, update and finalize the unit specific IBOIP, perform site inventory and analysis, develop CS vehicle/equipment configurations, develop the CS Non-Recurring Engineering (NRE) integration configurations for design (based on NIE Original Equipment Manufacturer involvement). Provide integration status of equipment designs by platform, role, echelon and by BCT for the following CS17 Units ((5) Total): (2) Total Army Analysis (TAA) 2020 IBCTs with Lower Tactical Internets (LTIs), (1) TAA IBCT, (1) Division Headquarters (HQ) and (1) TAA SBCT. Develop, coordinate, document and assess the updated and final LTI integration activities on 700+ platforms and evaluate the integration flow of multiple production lines of numerous platform types; develop, update and finalize the Unit specific IBOIPs (one for each Unit touched) are vetted with vehicle and equipment PMs, TRADOC Capability Managers (TCMs), Program Executive Offices (PEOs), G3/5/7,FORSCOM, Unit personnel and other stakeholders; perform Property Book Unit Supply Enhanced (PBUSE) and Standard Army Maintenance System (SAMS) unit analyses to determine the serial and bumper numbers that are used to align vehicle roles by echelon (based on the Modified Table of Organization and Equipment (MTOE) and Objective Table of Organization and Equipment (OTOE)); perform Unit Inventories to confirm vehicle and legacy equipment configurations, confirm vehicle roles and identify/coordinate in lieu of vehicles for shortages; develop NRE designs for vehicle and equipment (legacy and CS) configurations that will be required for Safety Release/Confirmation (SR/SC) testing; coordinate with platform PMs the NRE configurations that are combined to develop a CS Golden vehicle design candidate list to minimize SR/SC costs; monitor and assess the development of the A-kit design and ensure technical documents will produce a repeatable and consistent integration process using installation manuals and technical data packages. - IEP&E-CS: Monitor and coordinate the production and delivery of all CS A and B kits at the integration facility to assess production risk (technical, schedule and cost); and assess the ability of supporting PMs to produce (or acquire) and integrate CS equipment onto vehicle platforms. Provide technical direction in the establishment of effective manufacturing/integration processes, procedures and facilities; ensure plans for production resources (manpower, material, tooling & test equipment, etc.) are in-place and capable of supporting mission requirements; conduct reviews and assessments at key program decision points to ascertain the level of manufacturing / production readiness to proceed forward in the integration cycle and to ensure Integrated Master Schedule (IMS) event dates are met; monitor and report the status of integration of CS equipment onto platforms (and completed integrated platforms) and assess schedule slippages. - IEP&E-CS: Develop engineering and integration process flows to implement lean six sigma concepts and techniques for process improvements; coordinate with the Synch Fielding (SF) – Fielding team for planning and execution of unit meetings, site inventories, A/B kit deliveries, chalk vehicle block schedules, assessment of Fully Mission Capable condition and integration of vehicle schedules (both component and complete vehicle installations); provide production design and integration strategic guidance, goals and priorities and develop plans to achieve goals; identify and resolve highly complex network problems that cross organizational boundaries and promulgate solutions; assess political, fiscal, and other factors affecting stakeholder needs;			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
work with stakeholders at management levels to resolve problems such as conflicting requirements, funding and priorities; seek innovative solutions to efficiently accomplish multiple efforts within allocated resources; develop capability set engineering products to include processes, schedule, established technical baselines through Technical Exchange Meetings (TEMs) and synchronization across stakeholder organizations. Prepare, review, and approve major engineering communications for internal and external distribution; to include personnel and programmatic documents are properly prepared, approved, routed and archived; perform Risk Management by working with stakeholders to proactively identify technical risks and develop mitigation plans for project execution; assess impacts of risk to performance, cost and schedule; plan, coordinate, lead and conduct the CS Architecture TEMs; document TEM action items and track to closure during Capability Set Management Board (CSMB) action officer working group meetings; and plan, coordinate, lead and conduct weekly CSMB WG meetings to level set all stakeholders concerning current issues, discussion topics and schedule changes. - IEP&E-CS: CS18 Products and Services: Evaluate, synchronize and monitor platform and network system program acquisition schedules, integration costs, and system requirements across organizations for the development of production ready A&B-kit Interface Control Documents (ICDs) and Level II Technical Data Packages (TDPs) supporting CS18 Unit specific baseline evaluations in collaboration and coordination with platform and network system PMs; synchronize CS program schedules through coordination and communication with System of Systems Engineering and Integration (SoSE&I) Engineering and Integration (E&I) and other organizations within and outside of SoSE&I; coordinate with associated SoSE&I Directorates for the integration, forecasting, procurement, testing and delivery of platform integrated Network equipment for CS baseline evaluations (e.g. Business Team, Contracting, SoSE&I Integration Planning, PD Capability Package, SF-Engineering, SF-Fielding, SoSE&I E&I, etc); and vet IBOIPs with vehicle and equipment PMs, TCMs, PEOs, G3/5/7, Unit personnel and other stakeholders. - IEP&E-CS: CS19-22 Products and Services: Evaluate, synchronize and monitor platform and network system SWaP assessment of CS17 Unit specific Architectures in collaboration and coordination with platform and network system PMs; evaluate, synchronize and monitor platform and network system integration risks and mitigation plans for IBOIP identified in the Initial and CS19-22 Reference Architectures in collaboration and coordination with platform and network system PMs; evaluate, synchronize and monitor platform and network system program acquisition schedules, integration costs, and system requirements across organizations for the development of production ready A&B-kit ICDs and Level II TDPs supporting CS19-22 baseline evaluations in collaboration and coordination with platform and network system PMs; adjudicate and resolve operational, technical and programmatic issues for Initial and Reference Architecture Products in collaboration and coordination with SoSE&I-E&I, platform PMs, network system PMs and TCMs; synchronize CS program schedules through coordination and communication with SoSE&I-E&I and other organizations within and outside of SoSE&I; coordinate with associated SoSE&I Directorates for the management, integration, forecasting,			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
procurement, testing and delivery of platform integrated Network equipment for CS baseline evaluations (e.g. Business Team, Contracting, SoSE&I Integration Planning, PD Capability Package, Synch Fielding (SF)-Engineering, SF-Fielding, SoSE&I E&I, etc); support PMs and PEOs in resolution of tasks associated with Network integration; evaluate, synchronize and monitor PM implementation of Vehicular Integration for (C4ISR) Command, Control, Communication, Computers, Intelligence, Surveillance, Reconnaissance /(EW) Electronic Warfare (EW) Interoperability (VICTORY) standards in Initial and CS19-22 Reference Architecture products; and begin the planning for CS-19-22 Unit specific IBOIP requirements and develop and coordinate the IMS with all stakeholders. ***FY 2018 Plans:*** These funds provide for the following: - Production/Fielding Coordination for CS: Development, coordination, and execution management of the CS Fielding plan needed to produce, integrate, and field NIE tested Brigade improvements to the BCTs. Synchronize the integration and coordinate CS Fielding including CS17 closeout, CS18 execution, and detail plan for CS19 along with high level planning for CS20/21. This effort funds government and contractor personnel and travel to unit location and fielding sites for planning and coordination of resources, integrated schedule, training and fielding across CS Programs of Record (PoR). It does not fund the production, physical integration, or fielding of the CS. - Production/Fielding Coordination for CS17 Products and Services: Complete training and fielding of CS 17 units which begins in the 4th Quarter of FY17. This includes to IBCTs (one Active and one USARNG) and one Division HQ. Final close out of Materiel Fielding documentation and After Action Reports (AARs) for one Total Army Analysis (TAA) Infantry Brigade Combat Team (IBCT) with Lower Tactical Internet (LTI), three (3) TAA IBCTs and one (1) Division (DIV) Headquarters (HQ). - Production/Fielding Coordination for CS18 Products and Services: Synchronize the integration of the CS package into the Brigade Combat Team (BCT) consisting of multiple network systems, on various configurations of Mine Resistant Ambush Protected (MRAP) and High Mobility Multipurpose Wheeled Vehicle (HMMWV) platforms, at multiple locations. Complete synchronization, integration, and coordination of CS Fielding for the following CS18 Units (five (5) total): field upgrade to LTI to two (2) Total Army Analysis (TAA) 2020 IBCTs, one (1) TAA 2020 IBCT (OCONUS), one (1) TAA Army National Guard (ARNG) IBCT, and one (1) ARNG Division Headquarters (HQs). Coordinate the integrated designs by platform, role, echelon, and BCT for CS18 including LTI. Finalize CS18 fielding requirements. Develop and manage the Integrated Master Schedule (IMS) for CS18. Coordinate A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between system and platforms Program Executive Offices (PEOs) and Program Managers (PMs) for CS18. Coordinate the delivery of prototype and production builds for CS18. Support Configuration Management (CM) of platform configuration implementations, designs, A-Kits, and B-Kits. Support fielding integration of Program of Record (PoR) assets in			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
accordance with the defined BCT Reference architecture. Coordinate planning and execution of unit meetings, site inventories, A/B kit deliveries, chalk vehicle block schedules, assessment of Fully Mission Capable condition and integration of vehicle schedules (both component and complete vehicle installations). Coordinate and publish a synchronized New Equipment Training / New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for CS18 gaining units. - Production/Fielding Coordination for CS19 Products and Services: Conduct synchronization and coordination of CS Fielding for the following CS19 Units (four (4) Total): one (1) ARNG IBCT, one (1) ARNG Division HQ, two (2) TAA IBCT with LTI (including one OCONUS). Execute a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS19 to all gaining units. Begin CS19 NET/NEF requirements definition finalization and development of the NET/NEF integrated master schedule. This includes scheduling Program of Record unique NET, System of Systems NET (Capability Set holistic classes), and property accountability handoffs as an integrated process to enhance efficiency of the brigade modernization events. - Engineering and Integration Effort to develop and maintain CS and Sync Fielding specific Integrated Master Schedule (IMS): Develop and maintain an IMS for the Army's Capability Set – Synchronized Fielding (CSSF) efforts. Close out the IMS for FY17, maintain the IMS for FY18 and FY19 and develop initial IMSs for FYs 20, 21 and 22. Collect and analyze sub-schedule performance against the baseline IMS to identify schedule risks for the Army's CSSF efforts. Validate that established integration points are achievable and, if not, identify the schedule risk. Analyze schedule performance against schedule baseline, identify variances and their causes, and identify risks and/or impacts to critical path. Perform "what if" schedule analysis of alternative program courses of action to determine impact on schedule critical path. Update and post schedules on SharePoint for visibility and increased collaboration across ASA (ALT). Participate in After Action Reviews, Lessons Learned, Synchronized Fielding Technical Exchange Meetings (TEMs). Provide scheduling reports and briefings to meet the needs of the CSSF community. It also includes Capability Sync Fielding IMS and briefings and IMS analysis reports. Coordinate, develop, and publish a synchronized New Equipment Training/New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS to all gaining units.			
Title: Facilities and IT Support ***Description:*** Provides funding for infrastructure/facilities and IT support. ***FY 2016 Accomplishments:*** Provided funding for infrastructure/facilities. In addition it included the cost for IT support from Network connectivity for purchasing/leasing hardware, software, computers, communications equipment and services for the government staff.	0.234	-	-
Accomplishments/Planned Programs Subtotals	3.486	3.960	4.261

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• DY3: *NIE Test & Evaluation*	10.768	65.844	58.395	-	58.395	61.482	49.699	45.735	50.051	Continuing	Continuing
• DY4: *Network Integration Support*	13.700	-	-	-	-	-	-	-	-	0.000	13.700
• DY6: *Brigade and Platform Integration Support*	44.164	-	-	-	-	-	-	-	-	0.000	44.164
• DY7: *Army Systems Engineering, Architecture and Analysis*	15.802	14.166	15.508	-	15.508	15.998	25.121	25.499	26.214	Continuing	Continuing
• DZ6: *Army Integration & Coordination Management*	8.366	5.746	6.775	-	6.775	6.922	7.065	7.217	7.367	Continuing	Continuing
• FG7: *Emerging Technology Initiatives*	-	56.939	60.421	-	60.421	39.991	39.985	35.995	41.020	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project does not have any requirement for direct procurement of hardware or software.

E. Performance Metrics

N/A

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COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
DY6: *Brigade and Platform Integration Support*	-	44.164	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	44.164
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Beginning in FY 2017, the mission requirements and the funding have been moved to DY3; NIE Test & Evaluation to increase transparency.

A. Mission Description and Budget Item Justification

This project supports Phase IV through Phase VI of the Army's Agile Acquisition Process and provides management and oversight for the coordinated Army effort to deliver and maintain Mission Command Baselines as interoperable System of Systems (SoS) capabilities through the synchronization, coordination and facilitation of system deliveries to interoperability certification events.

Based on developed baseline Brigade level architectures, SoS Engineering & Integration (SoSE&I) will assess against approved Department of the Army (DA) objectives and baseline Brigade Combat Team (BCT) architectures to plan for and integrate approved network hardware and software systems onto the Soldier and vehicle systems that comprise the integrated BCT network. Work encompasses design and engineering of hardware and cable interfaces (e.g., A-kits) that enable integration of network hardware onto vehicle platforms; development of network data products required to support evaluations of the network; verification of integrated BCT network performance in garrison and field environments; field support to network hardware and software systems that deploy to the field and participate in operational evaluations conducted throughout the BCT battlespace; and, following the operational evaluation, restoration of selected platforms to their baseline configurations. This project includes government and contractor efforts to validate that the Army is properly integrating and fielding trainable, maintainable, interoperable, and sustainable network systems and components that will provide increased warfighting capabilities for the Soldier. This project includes:

• Integration of lab-developed network solutions onto Soldier and vehicle systems;
• Design, and fabrication of mounting brackets, cables, and kits required to enable vehicle platforms to employ new network hardware and software systems;
• Installation and checkout of network hardware and software systems prior to turning the equipment over to the soldiers who will employ these systems during the Network Integration Evaluation (NIE);
• Funding for Field Service Representative (FSR) support for selected Systems Under Evaluation (SUEs) participating in Phase V of the Army's Agile Process;
• Validation of critical operational threads that demonstrate the stability and continuity of the tactical network exercised during the NIE;
• Planning, coordination, and execution of hardware and software system support during the operational phase of the NIE;
• De-modification of vehicles at completion of the event;
• Documentation of interface kits, performance trends, and Integrated Logistics Support (ILS) data to facilitate hand-off of high-payoff systems to designated Programs of Record (POR);
• Feedback to industry on the performance of their technologies, systems, and concept relative to known operational gaps;
• Maintenance of the infrastructure needed by SOSI to support NIE operations at Ft Bliss, TX and White Sands Missile Range, NM.

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• System of Systems (SoS) and specialty engineering support needed to build upon NIE-provided documentation and execute design integration, production plan and testing of Capability Sets (CSs) which consolidate high-payoff capabilities in integrated fielding packages; and, planning, management, and execution of CS design requirements to synchronize manufacturing development, production, and synchronized fielding to design a BCTs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Platform Integration Support	16.430	-	-

Description: These funds provide for integration of network solutions onto Soldier and vehicle systems to enable an integrated network across the brigade battlespace.

FY 2016 Accomplishments:
For NIE 16.2, the organization designed, engineered, and integrated network components, subsystems, and systems onto 26 Golden Vehicles (GVs) and successfully completed safety assessments for 12 platforms in order to ensure their safe operation by soldiers. Following the GV effort, the organization successfully integrated and completed quality and validation checks on 220 Fleet vehicles used by the Brigade Combat Team during the NIE. After completion of the formal evaluation event, the Capability Package Directorate (CPD) demod-ed and returned 220 vehicles to the 2/1 AD BCT.
For NIE 17.1, the organization designed, engineered, and integrated network components, subsystems, and systems onto 25 Golden Vehicles (GVs) and successfully completed safety assessments for 10 platforms in order to ensure their safe operation by soldiers. Following the GV effort, the organization successfully integrated and completed quality and validation checks on 102 Fleet vehicles used by the Brigade Combat Team during the AWA. After completion of the formal evaluation event, the Capability Package Directorate (CPD) demod-ed and returned 102 vehicles to the 2/1 AD BCT.
This effort supported all activities associated with vehicle and platform integration:
• Coordination and planning of hardware and software system deliveries to SoSE&I activities at Fort Bliss, TX;
• Vehicle Integration (VI) planning and scheduling;
• VI execution;
• Network validation;
• Field support;
• Recovery from NIE field operations;
• Develop and deliver CS-15 Implementation Architecture;
• Documentation and handoff of critical information to support implementation of CS-15 efforts;
• CS-16 planning and design analysis;
• Synchronized fielding of CS-15 systems.
Vehicle integration: Leveraging the work performed during FY2014 and using brigade architectures that represent an evolving network modernization strategy:
• Develop Basis of Issue Plans (BOIPs) for each participating network hardware and software system;
• Identify the type (or types) of vehicle platforms that will host each network system;

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
• Identify and document vehicle size, weight, power, and electromagnetic constraints • Given vehicle size, weight, power, and electromagnetic constraints, develop engineering designs for the complete hardware kits (e.g., the brackets, mounting trays, cables, and other components that comprise an "A-Kit") needed to integrate each unique network hardware system onto each type of host platform that will participate in the NIE; • Fabricate unique hardware components needed to support vehicle integration efforts; • Integrate and verify the performance of each unique network system (e.g., B-kit) on its host vehicle - as specified by the BOIP; • Support installation and integration of instrumentation kits needed to collect data from designated network systems and verify that the instrumentation does not impact the performance of the network system; • Support the conduct of safety certification and release efforts for each unique vehicle configuration; • Perform SoS checkouts to ensure all SoSE&I-installed network hardware and software systems operate with each other, legacy systems, and other POR systems participating in the NIE; • Provide troubleshooting support for network validation exercises and selected network systems during the operational phase of the NIE/AWA; • De-installation of selected systems following each NIE/AWA; • Documentation and transfer of interface designs, training support requirements, performance trends, ILS requirements, and lessons learned to CS systems engineering teams; • Systems Engineering (SE) to mature the network interface designs developed during the NIE and enable expedited CS fielding; • Synchronized integration of a BCT Reference architecture consisting of multiple network systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at multiple locations; • Coordinate a synchronized Integrated Master Schedule (IMS) for fielding of CS-14 to all gaining units. • Integrate designs by platform, by role, by echelon, and by BCT. • Begin to finalize CS-16 requirements and develop and IMS for CS-16; • Coordinate A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between system and platforms PEOs and PMs. • Coordinate and deliver prototype and production builds • Configuration Management (CM) of Platform Architectural implementations, designs, A-Kits, B-Kits, and the IMS. • Systems Engineering (SE) to include: design maturation, decomposition of reference architecture into platform specific implementations network architecture, prototype/production build, integrated testing, configuration of integrated baseline and an integrated schedule for component management • Synchronize acquisition strategy and planning to include: synchronized production deliveries, fielding and support (with sponsoring PMs) to maintain the ARFORGEN Cycle.			
Title: Brigade Integration Support	11.981	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Description: These funds provide for the testing and verification of network components integrated with the BCT's vehicle and soldier systems that participate in NIE/AWA. ***FY 2016 Accomplishments:*** Brigade Integration: Once Platform/Vehicle Integration (VI) for NIE 16.2 and AWA 17.1 was complete; SOSE&I conducted a Network Validation Exercise (VALEX) to demonstrate network stability, connectivity, and performance in controlled conditions. VALEX consists of four phases: Load, Established, Integrate and Validate Threads. • During the Load phase, network systems and SoS engineers installed network software, firmware, and Operating Systems (OSs), set Internal Protocol (IP) addresses and configured all network systems on all NIE/AWA-unique platforms (Note: Program of Record (POR) and Legacy engineers and FSRs perform the same tasks on any of their platforms that will participate in an NIE/AWA; PORs are NOT funded by SOSE&I to perform these functions). Once all software and data products were loaded, SOSE&I and supporting network engineers and FSRs performed test/fix/test processes at the network system and component level. • During the Establish phase, SOSE&I engineers and FSRs to worked with Legacy and POR network support personnel to verify network hardware and software performance at the platform level. This work troubleshot any issues associated with network system configurations and ensured that each platform has the ability to perform its role within the tactical network. • In the Integrate phase, SOSE&I engineers and FSRs worked with Legacy and POR network personnel to verify network hardware and software performance at the SoS platform level – from the small unit (e.g., company, troop, or battery) up to the brigade. This work troubleshot any issues associated with network SoS configurations and ensured that each networked tactical units interacted with each other as expected. Activities during the Integrate Phase included training of the Soldiers who will be using the new BCT network during the NIE/AWA. • The Validate phase executed operational threads designed to demonstrate the BCT network's ability to provide specific capabilities to the BCT commander. Throughout VALEX planning and execution, SOSE&I coordinated with the Army Test and Evaluation Command (ATEC) and Brigade Modernization Command (BMC) to ensure network instrumentation, training, and operational requirements were coordinated.			
Title: Network Integration Support ***Description:*** These funds provide for the field setup, validation, verification and correction of the network for the NIE/AWA. ***FY 2016 Accomplishments:*** Network Integration Data Product builds for all transport layer communication devices for NIE 16.2 and AWA 17.1. This effort included: • Development of the NIE/AWA network's Lightweight Data Interchange Format (LDIF) file; • All NETOPS synchronization and coordination activities;	5.782	-	-

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
• Government Subject Matter Experts (SME) who assisted in the integration of specialized communication hardware in BCT Command and Control (C2) centers; • Contractor FSRs and network Subject Matter Experts (SMEs) who helped SOSE&I ensure the network was operational during VALEX, BCT Communications Exercises (COMMEXs), NIE Pilot Testing, and NIE execution.			
Title: NIE Infrastructure ***Description:*** Provides for Infrastructure (facilities) at Fort Bliss, TX and White Sands Missile Range (WSMR), NM. ***FY 2016 Accomplishments:*** Provided for setup, utilities, furniture, equipment and maintenance (of equipment and facilities) used by SoSE&I at Fort Bliss TX during the planning and execution of NIE 16.2 and 17.1. Includes lease and support maintenance contracts for Government Service Administration (GSA) vehicles that support the NIE/AWA mission at FBTX/WSMR.	1.135	-	-
Title: Network Integration Evaluation SUE support (NIE) ***Description:*** These funds provide for selected SUEs participation in NIE during Phase V of the Army's Agile process. ***FY 2016 Accomplishments:*** Provided funding to support integration and evaluation of technologies which were selected for participation in NIE 16.2 & 17.1 to achieve Army's Network 2020 and Force 2025 goals. These funds covered the NIE/AWA participant's costs for travel, shipment of equipment, Contractor Field Service Representatives (CFSRs) integration A-kit development, and the purchase of additional prototypes when needed to complete network architecture.	1.017	-	-
Title: Platform/BDE Integration Management Support ***Description:*** These funds provide for all SoSE&I government and contractor personnel providing direct management, systems engineering, and specialty engineering support to the Platform and Brigade Integration efforts at Ft Bliss in support of the NIE. ***FY 2016 Accomplishments:*** -Completed planning and coordination with multiple stakeholders for participation and resourcing of personnel, services, equipment and prototypes, and other deliverables needed for lab based risk reduction (LBRR), network and platform integration, training, field support and logistics, and event battle rhythm/schedules for AWA 16.1, NIE 16.2 and AWA 17.1. -Due to the return of the NIE evaluation unit (2/1 AD) to the force pool and based on HQDA, Forces Command (FORSCOM) and Training and Doctrine Command (TRADOC) guidance, accelerated planning for two FY17, two FY18 and one FY19 events. Staff worked simultaneously on six NIE / AWA (now called Joint Warfighting Assessments as of JWA 18.1) events, developing and arranging all solicitations, evaluation and decision presentations.	7.819	-	-

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
- Planned and executed Technical Interchange Meetings to assess technical feasibility of more than 143 proposed capabilities for AWA16.1, NIE 16.2 and AWA 17.1. Efforts resulted in 76 capabilities moving forward for participation in the LBRR and shaping the final Horseblanket and architecture for each event. - Provided AAE, PEO C3T and OSD with AMF Phases 3 analysis conducted at AWA 17.1 which provided most comprehensive look at airborne WNW performance through M&S, field and lab experimentations. Analysis provided inputs for PEO C3T AMF program RFP and other program milestones. - Developed and delivered AWA 16.1 and NIE 16.2 and AWA 17.1 Transport View and VALEX thread to support NIE/AWA. - Analyzed NIE and AWA schedule baselines to identify variances and their causes. Performed "what if" schedule analysis to support shifts to the planning and execution window for AWA 16.1, NIE 16.2 and AWA 17.1; resulting in the development of courses of action and ultimately shifts within the event process and execution. - Developed, coordinated and maintained up to date TIER 1 schedules for AWA 16.1 through NIE 19.1. Conducted weekly updates to all stakeholders which served to collaborate on multi-schedule key event process dates and decision points. Developed a "NIE/AWA Timing Overlay" that manage all key event milestone on to one chart. - Completed all formal industry and government correspondence requirements for AWA 16.1, NIE 16.2 and AWA 17.1. Efforts consisted of Solicitation, acceptance and rejection notifications, consolidation and summarization of final reports. - Coordinated and developed NIE 16.2/AWA 17.1 implementation plans as a result of TRADOC, LBRR and ATEC reports and recommendations. Efforts that ensured ASA(ALT) material developers had the opportunity to assess the feasibility of incorporating findings and lessons learned into their programs. - Developed, statused and maintained Integrated Master Schedules for AWA 16.2, AWA 17.1, and NIE 17.2. Ensured deliverables needed for lab based risk reduction (LBRR), network and platform integration, training, field support and logistics, and event battle rhythm/schedule supported successful execution. This effort also included all program, information, security, business, and personnel management efforts required to support the NIE/AWA. It included Program management; Contracting and financial management; Cost analysis; Personnel management; Operations; Security management; NIE event management; Information Assurance; Information management; Database and IT support; Facilities and infrastructure management; and, Knowledge management.			
Accomplishments/Planned Programs Subtotals	44.164	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• DY3: *NIE Test & Evaluation*	10.768	65.844	58.395	-	58.395	61.482	49.699	45.735	50.051	Continuing	Continuing
• DY4: *Network Integration Support*	13.700	-	-	-	-	-	-	-	-	0.000	13.700

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• DY5: *Production/Field Coordination for Capability Sets*	3.486	3.960	4.261	-	4.261	4.349	4.434	4.524	4.502	Continuing	Continuing
• DY7: *Army Systems Engineering, Architecture & Analysis*	15.802	14.166	15.508	-	15.508	15.998	25.121	25.499	26.214	Continuing	Continuing
• DZ6: *Army Integration Management & Coordination*	8.366	5.746	6.775	-	6.775	6.922	7.065	7.217	7.367	Continuing	Continuing
• FG7: *Emerging Technology Initiatives*	-	56.939	60.421	-	60.421	39.991	39.985	35.995	41.020	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project does not have any requirement for direct procurement of hardware or software.

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / *Brigade Analysis, Integration and Evaluation*	Project (Number/Name) DY7 / *Army Systems Engineering, Architecture & Analysis*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
DY7: *Army Systems Engineering, Architecture & Analysis*	-	15.802	14.166	15.508	-	15.508	15.998	25.121	25.499	26.214	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides the Army's leadership and materiel developers with the necessary modernization planning, System of Systems (SoS) engineering, technical analysis, architectural products, critical path analysis, and risk analysis and mitigation planning to influence the Army's materiel portfolio. This project defines and executes its mission in the context of a SoS Engineering Management Plan (SoSEMP), that provides comprehensive engineering, analysis and architecture processes across early CS requirements and roadmap development; engineering and analysis tasks; lab and field risk reduction efforts; capability assessments, and unit-specific architectural planning support to boots-on-the-ground synchronized fielding execution. This project also funds Cyber Security engineering, architecture and development tasks necessary to create effective, affordable and secure network capabilities that address critical gaps, meet Mission Command Network (MCN) 2020 objectives and/or Force 2025 and Beyond (F2025B) initiatives. This project also funds engineering synchronization oversight and governance for the Army SoS Common Operating Environment (COE). This effort includes analysis of integrated capabilities, requirements decomposition and alignment, and resource and acquisition synchronization. This project includes support to other Department of Defense (DOD) and international agencies for joint programs and collaboration efforts.

Key tasks are Reference Architecture products; Architecture Planning Analysis, Integration and Coordination; Engineering Analysis and Design; Portfolio Analysis; Integrated Master Schedule (IMS); Integration Risk Identification, Mitigation, Plans and Reports; Strategic Process and Planning; Future Capability Sets Planning Integration and Engineering; CS Products and Services.

The effort includes costs for labor (Government and contractor), service contracts, travel, training, supplies, facilities, and Information Technology (IT) support.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Army System of System Engineering and Analysis	9.196	8.393	10.509
Description: Provide coordinated SoS engineering, architectures, and analysis products for integrating new technologies with existing capabilities to stakeholders (e.g. materiel developers, TRADOC Capability Manager (TCM), Army Capabilities Integration Center (ARCIC), etc.) to deliver integrated solutions to Army formations.			
FY 2016 Accomplishments: -Developed Capability Set roadmaps by leveraging the ASA(ALT) IMS data to support decisions on Program of record fielding and risk reduction efforts. and capturing critical path analysis to identify analysis/design, decision and POR delivery and fielding requirements for risk reduction, evaluation and fielding CS baselines per ARFORGEN.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
-Provided specific and integrated roadmap products to manage programmatic coordination, integration and evaluation (i.e. NIE) of critical Network 16.2, COE, Cyber and the evolving F2025 requirements supporting Army Modernization. -Conducted strategic planning in support of MCN2020, F2025B, SoS integration & Fielding to include development of planning tools such as the ASA(ALT) IMS, SoSE&I IMS, COE IMS, MCN2020 Storyboard and Capability Roadmap Matrix. Tools that are leveraged by all of the stakeholder communities to include G3/5/7, PEOs, TRADOC and ATEC. -Executed and supported each process stage of the engineering and integration model by synchronizing PEO/PM development and test timelines (through the Integrated Master Schedule and Army planning activities), documenting CS design and architecture (at multiple levels of views/scope from Enterprise down to specific platform design) throughout the CS life cycle to include operational test and assessments aligned and executed within AWA 16.1, NIE 17.2 and AWA 17.1. -Conducted cross-organizational analysis of capabilities to refine MCN 2020 Focused End States, Detailed tasks and Objectives. Synchronizing program of record timelines with events and driving an incremental approach to accomplishing MCN 2020 objectives. -Executed analysis to support strategic decisions related to the WSR, POM, MCN 2020, F2025B. Efforts consisted of Integration Risk Identification, Development of Mitigation options, Plans, and Reports which resulted in the refinement of MCN 2020 Focused End States, Detailed tasks and Objectives and the synchronization program of record timelines with events to drive an executable incremental approach to accomplishing MCN 2020 objectives. -Provided G3/5/7 with Transport Convergence Medical Analysis ISO Focused end-state development and associated risk reductions (tactical network supportability of medical data from L1-L3 medical facilities risk reduction). -Provided ASA(ALT) with analysis into alternative transport architectures, to include flattened terrestrial architectures and Future narrow Band waveforms. Army is using FNB study to inform on alternative waveform solutions to WNW (e.g. MNVR AoA) and to improve tactical transport design and performance. -Provided ASA(ALT) with analysis into performance of LDR-radio based lower tier tactical network and Network Basis of Issues (NBOI) to support 2 Channel LDR Radio *Provided PM PNT with transport network supportability analysis for PM PNT Traffic. In support of PDR and Milestone B decision of Pseudolite PM PN&T program.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
-Provided PM PNT with Pseudolites performance analysis ISO RCO and PM PNT architecture development. Analysis provided key PNT performance metrics and their verification against PNT requirements -Developed and Delivered Reference architecture products for CS17-20 IBCT, CS21 SBCT, CS22 ABCT, and for CS19 Combat Aviation Brigade (CAB) to include integrated network basic of issue, SoS network View, Vehicle Interface Diagrams, SoS Threads to drive system of system and vehicle integration for IBCT/SBCT/ABCT/CAB.			
FY 2017 Plans: Army Formation Reference Architecture products: These funds provide for Subject Matter Expertise to develop and maintain System of Systems (SoS) architecture and integration products for all Army Combat Formations (Corps & below). These products are used to design Objective, Base, & Modified Table of Organization & Equipment (TOE), capabilities sets (CS), and demonstration/test environments (e.g. NIE, Operational Test, and Army Interoperability Certification). This effort also supports working groups such as the Network Synchronization Working Group (NSWG), and formal Army decision forums such as the SoS General Officer Steering Committee (SoS GOSC) and the Army's Land War Net GOSC (LWN GOSC). The four core reoccurring products are: - Integrated Basis of Issue Plan (IBOIP): detailed database and spreadsheets describing the objective, basic, and modified TOE, TRADOC required BOI system placements, etc. - System of Systems View (SoS) Diagram: Visual reference document diagramming all Soldier and platform roles, and their network connectivity and waveform assignments to each other as dictated by the IBOIP. - Vehicle Interconnectivity Diagram (VID): Visual reference document diagramming software (operating systems, applications, etc), hardware (radios, computers, antennae's, routers/switches, etc.), internal/external networks (protocols, ports, gateways, etc.), and waveforms (frequency bands) are connected for individual platforms. - System of System (SoS) Thread: Visual reference diagram documenting technical use cases of the SoS architecture and the data/message flows throughout Brigade and below based on Army universal task lists, Army Interoperability Certification, and Joint Common System Function List. - Head Quarters Department of the Army (HQDA) Architecture inquiries: These funds provide for SMEs which respond to HQDA inquiries and it provides for developing and/or updating Army documents (e.g. regulations, exercise orders, directives, policies, etc.). Coordination with PEOs, ARSTAFF, FORSCOM units, and TRADOC			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
stakeholders to synchronize the development, maintenance and configuration management of capability sets for all Army formation types. This includes design information for COE, Cyber, and PNT. - Data/Configuration Management: These funds provide for maintaining consistency of architecture products that are leveraged by the Army community to develop capability gaps, operational exercises, and PoR development and integration activities. This includes the resourcing, planning, and IT systems to facilitate configuration management activities. - CS17 Products and Services: Engineering design and analysis of Infantry formations networks to verify operational capabilities, cost, and schedule can be met. Delivery of modified TOE architecture products to all units fielded during FY-17 to facilitate new equipment fielding of current formations CS17 Units 6 total: 2xInfantry Brigade Combat Teams (IBCTs) with lower tactical internet, 1xDIV HQ, 1xIBCT only dismounted radios, and 2xIBCT without lower tactical internet. - CS18 Products and Services: Engineering design and analysis of Infantry formations networks to verify operational capabilities, cost, and schedule can be met. Delivery of modified TOE architecture products to all units fielded during FY-17 to facilitate new equipment fielding of current formations CS18 Units 6 total: 1xIBCT with lower tactical internet, 1xANG Division HQ, 1xIBCT Division HQ, 1xIBCT only dismounted radios, and 2xIBCT without lower tactical internet. - Architecture Planning Analysis, Integration and Coordination: These funds provides the Army's leadership and materiel developers with the necessary Capability Set (CS) modernization planning, technical and risk analysis, mitigation planning, and system of systems engineering (SoSE). This project explicitly includes critical Common Operating Environment COE, Cyber, PNT as well as Division & Corps echelons as it pertains to architecture development to meet network 2020 and 2025 initiatives. - Engineering Support & Design: These funds provide SME support to the Army's Network Modernization Strategy (NMS) at both the tactical and enterprise levels. FY17 Network Modernization engineering will include support for Position Navigation & Timing (PNT) integration into the overall Capability Set design, Multinational/Mission Partner Environments architecture development, Army defensive and offensive cyber capabilities integrated at both the tactical and enterprise levels, network modernization risks and gaps for Corps level units and below, Army spectrum strategy, and COEv3+ modernization risks and gaps. - Portfolio Analysis:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
These funds provide the Subject Matter Expertise to conduct Portfolio analysis across the entire Army portfolio of programs of record (PORs) and systems with an intent of maximizing Warfighter utility and effectiveness under cost, schedule and technology readiness constraints. Analysis in this area provides Army leadership with options to make sound analyses-driven investment decisions that optimize the overall acquisition portfolio warfighting function. Activity also standardizes the programs' data sets elements based on which program-level decisions can be made, as well as improves the overall methodology of the Army's portfolio analysis. - ASA(ALT) Integrated Master Schedule (IMS): These funds provide SME to maintain a reliable IMS that synchronizes Engineering, Architecture, Programs of Record (POR), Network Evaluation, and Capability Set (CS) fielding scheduled aligned to the POM and the Army's ARFORGEN cycles. Efforts to include implementation of networked IMS tools for POR input. Efforts to analyze Platform and MCN 2020 network components schedules to identify issues and opportunities. - SoSE&I Integrated Master Schedule: These funds provide SMEs to develop and maintain an Integrated Master Schedule (IMS) for internal deliverables supporting Capability Set Fielding, COE, Cyber, Architecture, Engineering Analysis and Risk Reduction, aligned to CS schedules and evaluation event activities. - Integration Risk Identification, Mitigation, Plans and Reports: These funds provide SME to conduct Integrated Risk Management enabled by ASA(ALT) IMS and MCN 2020 Focused End State objectives and tasks. It provides analysis of MCN 2020 FES objectives and tasks against ASA(ALT) IMS to identify risks to the delivery of Mission Command Network. Develop mitigation plans and coordinate and synchronize with PoRs to reduce risk. Identify opportunities to bring in capabilities early to formal Capability Set configurations through analysis of PEO portfolios and IMS, to include: Capability Risk Matrix, Mitigation Plans for MCN 2020 delivery, and tracking and statusing FES changes. - Strategic Process and Planning: These funds provide SME to incorporate ASA(ALT) network objectives into strategic planning for achievement of MCN 2020 focused end states and Force 2025B emerging solutions, to include: Strategic Planning Review events, Road map to MCN 2020 validation, Agile Process Standard Operating Procedure rewrite, Network Synchronization Working Group outcomes analysis, Proponent IPT, and Database development and improvements to track and report progress. - Future Capability Sets Planning Integration and Engineering: These funds provide for the advancement of collaboration and coordination between platforms, network systems, and enterprise services as part of the planning efforts required to complete a CS fielding. CS reference architecture products are the result of			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018

this collaboration. CS reference architecture products enable CS fielding platform integration design decisions. They provide a synchronized and holistic description of how the Army network integrates into and functions for the FORSCOM units designated to receive a CS fielding.

- CS16 Products and Services:
Final close out of unit specific IBOIP, SoS View diagrams, VIDs, SoS Threads, Network Verification (NETVer), Non-Recurring Engineering (NRE), and configuration management for 1xIBCT with Lower Tactical Internet, 1xDIV HQ, and 3xIBCT without lower tactical internet.

- CS17 Products and Services:
Coordinate and communicate with PMs, TCMs, PEOs, ASA(ALT), G3/5/7, SoSE&I E&I, and other organizations within and outside of SoSE&I to ensure synchronization of CS baseline evaluation product program schedules. In collaboration with platform and network system PMs, document network system design, identify integration risks, and assist in the development of mitigation plans to help ensure schedule of CS fielding is executable.

These funds also support the effort to:

Evaluate, synchronize and ensure platform integration requirements are embedded in the performance scope for SoSE&I managed System Under Evaluation (SUE) production RFPs in collaboration and coordination with platform PMs, network system PMs, and the SoSE&I Engineering Planning and System Integration (EPSI) Division. Adjudicate and resolve operational, technical, and programmatic issues for initial and RA products in collaboration and coordination with SoSE&I E&I, platform PMs, network system PMs, and TRADOC Capability Managers (TCMs). Evaluate, synchronize, and monitor the development of the CS 17 unit specific architecture products, as defined by NIE evaluation results, in collaboration and coordination with SoSE&I E&I and the SoSE&I Capability Package (CP) Synchronized Fielding (SF) - Engineering Division (ED). Evaluate the development of RA products required for SF tasks/mission accomplishments utilizing architecture inputs (e.g., TVs, Mission Threads, Validation Exercise, etc.) from NIEs.

Develop, update, and finalize the CS 17 unit specific SoS view architecture, from Brigade Headquarters to dismounted soldier, and the detailed engineering VIDs, details how CS and legacy equipment will be connected within the vehicle from the CS aggregated network vehicle (golden vehicle) list produced by the Production Design and Integration team. Plan, coordinate, and assess Safety Release/Safety Confirmation (SR/SC) testing for CS Golden Vehicle designs. Coordinate with SF fielding team for planning and execution of SR/SC and materiel release planning to support CS unit fielding.

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Coordinate with associated SoSE&I Directorates for the management, engineering, integration, testing, and delivery of platforms with integrated network equipment for CS evaluation, testing, and fielding. Incorporate the CS 17 unit specific architecture product schedules into the IMS. Develop the CS NRE configurations for reference and unit specific IBOIP architectures consisting of multiple network systems on multiple configurations of Mine Resistant Ambush Protected (MRAP) vehicles, the family of High Mobility, Multipurpose Wheeled Vehicles (HMMWVs), as well as other ground combat, combat support, and combat service support platforms for multiple roles in across an IBCT. Perform and document Configuration Management (CM) of unit specific vehicle network architecture designs, (e.g. IBOIPs, SoS views, VIDs, Threads, etc). Develop, coordinate, and assess test mission threads from NIE and CS to exercise data flows within the network and vehicles to verify network requirements and message functionality. Plan, coordinate, and participate in CS NETVer events to verify CS designs and ensure the functionality of CS production equipment. - CS18-22 Products and Services: Coordinate and communicate with PMs, TCMs, PEOs, ASA(ALT), G3/5/7, SoSE&I E&I, and other organizations within and outside of SoSE&I to ensure synchronization of CS baseline evaluation product program schedules. In collaboration with platform and network system PMs, document network system design, identify integration risks, and assist in the development of mitigation plans to help ensure schedule of CS fielding is executable. Coordinate with associated SoSE&I Directorates for the management, engineering, integration, testing, and delivery of platforms with integrated network equipment for CS evaluation, testing, and fielding. Analyze Objective Table of Organization and Equipment (OTOE), network system PMs' equipment fielding plans, and platform PMs' engineering and modernization schedules in order to develop, update, and finalize a CS reference INBOIP, SoS view architecture, and VIDs and incorporate these architecture products into the IMS. Develop the CS NRE configurations for reference IBOIP architectures consisting of multiple network systems on multiple configurations of Mine Resistant Abrams, Bradley, Stryker, Armored Multi-Purpose Vehicle (AMPV), Ambush Protected (MRAP) vehicles, the family of High Mobility, Multipurpose Wheeled Vehicles (HMMWVs), as well as other ground combat, combat support, and combat service support platforms for multiple roles in across an IBCT, Stryker Brigade Combat Team (SBCT), and Armored Brigade Combat Team (ABCT). Effort to develop and maintain Capability Set and Sync Fielding specific IMS: These funds provide SME to develop and maintain an Integrated Master Schedule for the Army's Capability Set – Synchronized Fielding efforts. Close out the IMS for FY16, maintain the IMS for FY17 and develop initial IMSs for FYs, 18, 19 and 20. Collect and analyze sub-schedule performance against the baseline IMS to identify schedule risks for the Army's Capability Set – Synchronized Fielding (CS-SF) efforts. Validate that established integration points are achievable and, if not, identify the schedule risk. Analyze schedule performance against schedule baseline, identify variances and their causes, and identify risks and/or			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
impacts to critical path. Perform “what if” schedule analysis of alternative program courses of action to determine impact on schedule critical path. Update and post Schedules on SharePoint for visibility and increased collaboration across ASA(ALT). Participate in After Action Reviews, Lessons Learned, Synchronized Fielding Technical Exchange Meetings (TEMs). Provide scheduling reports and briefings to meet the needs of the CS-SF community. It also includes: Capability Sync Fielding IMS and briefings and reports from IMS analysis. To synchronize, develop and publish across Army’s PEOs analytical community FY17 integrated network analysis plan, concentrating on cross-PEO network integration and performance issues analysis. Execute this plan to deliver several strategic ASA(ALT) whitepapers on key Army’s future technologies affecting network 2020 and Network 2025 acquisition-level decisions. Develop and execute key Analyses in the areas of technical requirements and performance related to Army’s transport convergence initiative for Logistical and medical data and Intel-related operations, Army spectral assignment risk mitigation strategy. In response to GAO guidance, to further baseline and trend Integrated Network capability set CS18/19 performance in NIE 17.1/17.2 events using Army DAE-approved Key technical indicators (KTIs). Using ATEC instrumented NIE 17.1/17.2 analyzed and evaluated KTIs from key SoS performance metrics and another key survey-driven SoS technical factors. Taking together, these multiple key indicator measurements will show integrated network SoS technical performance trends against the baseline. When these standardized measurements are repeated at NIEs, important trends associated with network SoS objective performance and operational capability are observed and reported to AEE and DAE. ***FY 2018 Plans:*** Army Formation Reference Architecture products: Develop and maintain all Army Combat Formations (Corps & below) SoS architecture and integration products. These products are used to design Objective, Base, and Modified Table of Organization & Equipment (TOE) for demonstration/test environments (e.g. NIE, Operational Test, and Army Interoperability Certification). Four core recurring products are: - Integrated Basis of Issue Plan (IBOIP): detailed database and spreadsheets describing the objective, basic, and modified TOE, TRADOC required BOI system placements, etc. - SoS View Diagram: Visual reference document diagramming all Soldier and platform roles, and their network connectivity and waveform assignments to each other as dictated by the IBOIP. - Vehicle Interconnectivity Diagram (VID): Visual reference document diagramming software (operating systems, applications, etc), hardware (radios, computers, antennae’s, routers/switches, etc.), internal/external networks (protocols, ports, gateways, etc.), and waveforms (frequency bands) are connected for individual platforms.			

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- SoS Thread: Visual reference diagram documenting technical use cases of the SoS architecture and the data/message flows throughout Brigade and below based on Army universal task lists, Army Interoperability Certification, and Joint Common System Function List. Architecture Planning Analysis, Integration and Coordination: These funds provide for the development of products which are necessary for modernization planning, technical and risk analysis, mitigation planning, and SoS engineering. It includes Cyber and Position Navigation & Timing (PNT) as well as Division & Corps echelons as it pertains to architecture development to meet MCN 2020 and F2025B initiatives. Engineering Analysis & Design: These funds provide support to the Army's Network Modernization Strategy (NMS) and Capability Needs Assessment (CNA) at the tactical and enterprise levels. Network Modernization engineering will include support for PNT integration into the overall CS design, Multinational/Mission Partner Environments architecture development, Army defensive/offensive cyber capabilities integrated at both the tactical and enterprise levels, network modernization risks/gaps for Corps level units and below, and Army spectrum strategy. Analyze Programs of Record (PoRs) and emerging technologies to maximize Warfighter effectiveness under cost, within schedule and meeting technology readiness constraints. Perform cross-PEO integration and performance issues analysis. Develop strategic plans for providing key technologies in support of Army gaps. Conduct analyses of technical and performance requirements to support technology insertion for Warfighter capability (ie. Intel-related operations, spectral assignment risk mitigation, and PNT architecture placement). IMS: These funds provide a reliable IMS that synchronizes engineering, architecture, PoRs, network evaluation, and CS fielding schedules to ensure their alignment to the Program Objective Memorandum (POM) and the Army Force Generation (ARFORGEN) cycles. Efforts include implementation of IMS tools for POR input, analyses of Platform schedules, and MCN 2020 network components schedules to identify issues and opportunities. These funds also provide for analysis of Program Executive Office (PEO) portfolios and their IMS which identifies opportunities to incorporate capabilities earlier into CS configurations. Integration Risk Identification, Mitigation, Plans and Reports: These funds provide strategic planning in support of network modernization objectives and CNA efforts. It provides analysis of objectives, potential risks and mitigation plans to capability delivery. Strategic Process and Planning:			

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These funds provide for strategic planning to achieve MCN 2020 FES, F2025B, and emerging solutions, to include: Strategic Planning Review events, Road map to MCN 2020 validation, Agile Process Standard Operating Procedure adaptation for rapid acquisition, Network Synchronization Working Group outcomes analysis, Proponent Integrated Product Teams (IPT), and database improvements to track/report progress. - Integration Engineering Planning and Execution of Capability Sets (IEP&E-CS): These funds provide for the advanced collaboration and coordination with platform and network system Product Managers (PdMs) to ensure CS Fielding platform integration design decisions are based on CS Reference Architecture products for CS18-23 to be evaluated in Network Integration Evaluation (NIE) events. Develop the Unit-specific architecture (e.g., Network Basis of Issue (NBOI), Unit Transport Design (TD), etc.) for CS Fieldings. Engineering coordination with platform and equipment integrators to ensure component level equipment is designed to meet platform level integrated design requirements established in the Unit NBOI and validate the integrated architecture design is functional. Develop the unit integration design for each CS. Update and transition architecture products to stakeholders by utilizing Unit specific NBOIs based on property book/maintenance analysis and physical inventory comparisons of Forces Command (FORSCOM) assets. Assess, synchronize, and status the production and installation of CS products and processes for platform integration and installation at the integration facilities to meet delivery schedules. Document and continuously improve engineering activities and process flows for efficiencies. Work with stakeholders to resolve problems such as conflicting requirements, funding and priorities. Seek innovative solutions to efficiently accomplish multiple efforts within allocated resources. Develop CS engineering products to include processes, schedule, established technical baselines through Technical Exchange Meetings (TEMs) and synchronization across stakeholder organizations. - IEP&E-CS: CS18 Synchronize and monitor platform and network system Size, Weight and Power (SWaP) assessment of Unit specific Architectures in collaboration and coordination with platform and network system PMs. Coordinate NRE funding requirements and delivery/ production schedules with the Synchronized Fielding (SF) – Fielding team to ensure production schedules are met to field selected systems. Develop, update, and finalize the unit specific NBOI, assist in site inventory and analysis, develop CS vehicle/ equipment configurations, develop the CS Non-Recurring Engineering (NRE) integration configurations for design (based on NIE Original Equipment Manufacturer involvement). Provide integration status of equipment designs by platform, role, echelon and by BCT for the following CS18 Units (five (5) total): field upgrade to LTI to two (2) Total Army Analysis (TAA) 2020 IBCTs, one (1) TAA 2020 IBCT (OCONUS), one (1) TAA ARNG IBCT and one (1) ARNG Division Headquarters (HQs). - IEP&E-CS; CS19 Products and Services: Evaluate, synchronize, and monitor platform and network system program acquisition schedules, integration costs, and system requirements across organizations for the development of production ready A&B-kit Interface Control Documents (ICDs) and			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Level II Technical Data Packages (TDPs) supporting CS19 Unit specific baseline evaluations in collaboration and coordination with platform and network system PMs. Synchronize CS program schedules through coordination and communication with System of Systems Engineering and Integration (SoSE&I) Engineering and Integration (E&I) and other organizations within and outside of SoSE&I. Coordinate with associated PoRs for the integration, forecasting, procurement, testing and delivery of platform integrated Network equipment for CS baseline evaluations. Vet NBOIs with vehicle and equipment PMs, TCMs, PEOs, G3/5/7 and other stakeholders. Develop, coordinate, document and assess the updated and final LTI integration activities on 700+ platforms and evaluate the integration flow of multiple production lines of numerous platform types. Develop, update, and finalize the Unit specific NBOIs (one for each Unit touched) and are then vetted with platform and equipment PMs, TRADOC Capability Managers (TCMs), Program Executive Offices (PEOs), G3/5/7, FORSCOM and other stakeholders. Perform Property Book Unit Supply Enhanced (PBUSE) and Standard Army Maintenance System (SAMS) unit analyses to determine the serial and bumper numbers that are used to align platform roles by echelon (based on the Modified Table of Organization and Equipment (MTOE) and Objective Table of Organization and Equipment (OTOE)). Assist in Unit Inventories to confirm vehicle and legacy equipment configurations, confirm vehicle roles and identify/coordinate in lieu of vehicles for shortages. Develop NRE designs for platform and equipment (legacy and CS) configurations that will be required for Safety Release/Confirmation (SR/SC) testing. Coordinate with platform PMs the NRE configurations that are combined to develop a CS Golden platform design candidate list to minimize SR/SC costs. Monitor and assess the development and maturation of the A-kit design and ensure the installation manuals and technical data packages produce a repeatable and consistent integration process to support new equipment fieldings. - IEP&E-CS; CS20-23 Products and Services: Evaluate and synchronize platform and network system SWaP assessment of Network Architectures in collaboration and coordination with platform and network system PMs in support of the CS20-23 Reference Architectures. Evaluate, synchronize, and track platform and network system integration risks and mitigation plans for execution to the NBOI identified in collaboration and coordination with platform and network system PMs. Evaluate, synchronize and track disconnects in platform and network system program acquisition schedules, integration costs, and system requirements across organizations for the development of production ready A&B-kit ICDs and Level II TDPs supporting CS20-23 baseline evaluations. Resolve and elevate operational, technical and programmatic issues for Initial and Reference Architecture Products in collaboration and coordination with SoSE&I-E&I, platform PMs, network system PMs and TCMs. Synchronize CS program schedules through coordination and communication with other organizations within and outside of SoSE&I. Coordinate with associated PoRs for the management, integration, forecasting, procurement, testing and delivery of platform integrated Network equipment for CS baseline evaluations. Support PMs and PEOs in resolution of tasks associated with Network integration. Evaluate, synchronize, and track PM implementation of Vehicular Integration for Command, Control, Communication, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR) / Electronic Warfare (EW) Interoperability			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
(VICTORY) standards in Initial and CS20-23 Reference Architecture products. Begin the planning for CS20-23 Unit specific NBOI requirements and develop and coordinate the IMS with all stakeholders.			
Title: Common Operating Environment (COE)	2.957	3.154	1.161
Description: Provide Engineering Synchronization Oversight and Governance for the Army SoS Common Operating Environment (COE); provide integrated, cross-portfolio system engineering, architecture products and cost benefit analysis and synchronized acquisition planning for COE crossing multiple PEOs and Computing Environments (CEs); provide SoS requirements decomposition; conduct COE related Verification & Validation (V&V) planning and assessment; and serve as the DA Staff advocate for COE and Cross Cutting Capabilities (CCCs). Serve as the Trail Boss for ASA (ALT) I2E. ***FY 2016 Accomplishments:*** The funds provided the following: Given the successful development and broad adoption of the Common Operating Environment System of Systems Engineering documentation, particularly the COE Technical Reference Model establishing the ideal of a modular services layer to be used in common by all applications within a computing environment, COE has moved into implementation. For example PEO C3T awarded a contract to provide the Command Post Computing Environment services layer and Software Development Kit in early 2017. FY 2016 funding support work to begin COE implementation now underway and transform the organization to enable full life-cycle application integration and testing through fielding, implementation focused governance, and cross-PEO architecture integration and system of systems engineering coordination. Funds support reorganization and refocusing of the COE Division; reorganization included halving the size of the organization, reorienting staff toward the new focus on governance, architecture and standards, and integration and interoperability testing, briefing stakeholder organizations, and recognizing departing staff. Supported development of the Army Software Re-baselining Execution Order which will reduce the number of fielded SW baselines. Conducted the stakeholder outreach and project staffing leading to the early FY17 decision to place the Command Post Computing Environment under a single PEO lead. --Orchestration and COE Governance Execution: Supported development of Focused End State 2 (Transition to COE) as part of the Army's Mission Command Network Strategy, identified by TRADOC as one of five operational requirements with key enterprise dependencies. Provided development and maintenance of the COE Integrated Master Schedule, oversight of Computing Environment (CE) Working Groups (WGs) conducting cross-CE coordination and conflict resolution efforts, and ASA (ALT) support for the Army Staff Network Synchronization efforts. Chaired the Technical Advisory Board (TAB) the primary COE governance body. Supported COE STRATCOM development and industry engagement, including business case development. Developed and staffed for approval the FY16 annual AAE System of Systems (SoS) directive which guided evolution of the Army SW Baseline, and Standards & Specification adoption across ASA(ALT), (OSD/Joint), Development Planning model. Led OSD and Services study team that prepared and published: "Better Buying Power 3.0: Use Modular Open Systems Architecture to Stimulate Innovation: Findings and Recommendations of the Study Team". Revised the COE SharePoint Portal to organize the			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
information around the COE Technical Baseline. Converged COE Technical Advisory Board (TAB) and Engineering Libraries to allow TAB–approval of engineering documents to immediately populate the technical baseline. --SoS Engineering: Supported early stage development of COE JCIDS requirements documents leading to staffing of Computing Environment Integrated Capabilities Documents in FY 17 for approval by the Army Requirements Oversight Council and preparing the way to discontinue issuing annual SoS Systems Engineering Directives in FY 18. Developed the COE Integrated System Engineering Plan (ISEP). Completed reviews of CE Execution Plans (EPs), System Engineering Plans (SEPs) and SoS Engineering Management Plans (SoSEMPs). Provided COE Technical Baseline Development support including a Technical Roadmap for the Programs of Record (POR) for future capability development and software integration within the COE. Provided development of COE Engineering Change Proposals (ECPs) and vetting. Provided SoS engineering and analysis to synchronize PoR migration to COE CCC / Enabling Technology (ET) engineering and prioritization, implementation plan updates, building and publishing the COE Technical Reference Model, Standards WG, Resource WG, and Schedule WG management, and cross-CE and PEO SoS engineering support. Published COE Business Rules to enable PMs to provide information for the Program Objective Memorandum (POM). Coordinated the incorporation of COE Program Reviews directly into Weapon System Reviews (WSRs); before this year COE information was briefed separately. Coordinated a G-8, ASA(ALT) review of pending COE Decisions, leading to LandWarNet Council of Colonels prioritization for resolution. Guided COE/CE architecture development by developing stakeholder approve integrated architecture templates, cited as a (Model-based System Engineering) best practice. Developed scripts and a COE v3 standards library module in MagicDraw to help CE architects auto-generate CE Information Systems (IS) Capability Development Document (CDD) architecture products and Standard Views (StdVs). Developed DoDAF products for the Standard & Sharable Geospatial Foundation (SSGF), Common Overlay, and Machine-to-Machine Messaging Enabling Technologies (ETs). Managed architectures for Command Post (CP) CE, Mounted CE (MCE), Mobile/Handheld CE (M/HHCE) in the COE Integrated Architecture Environment hosted at TRADOC Architecture, Information Management and Knowledge Element (AIMKE). Assisted CE and ET leads with developing DoDAF products as part of their CE architectures in the COE Integrated Architecture Environment and Detailed-Engineering Change Proposals. -- Technical Management: Provided technical support to oversee execution of the COE Implementation Plan and DA COE EXORD compliance and execution, including Cost Benefit Analysis (CBA), tasking management, Modular Open System Architecture Guidance development and implementation, verification of COE critical enabler implementation, and risk assessments and analysis. Supported development of standards, evaluation strategy and transition plan for the SoSE&I Systems Engineering and Technical Assistance (SETA) contract consolidation. In addition, the COE Directorate internally evaluated contract support and reduced support by 42% (from 14 to 8 contracts). Supported COE STRATCOM development and industry engagement—including publication of “COE” a flip book used in conjunction with the Association of the US Army Conference. --Testing, Certification and Fielding Preparation: Supported development of the COE Integration and Assessment Plan (CIAP) and executed the conceptual work and organizational outreach needed to develop the COE Federated Integration Environment (FIE) a networking of lab facilities to allow PMs to test applications on the full tactical network. The FIE will also allow TRADOC to experiment with force structure alternatives and develop doctrine, tactics, technics and procedures early in the COE development			

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cycle. Supported the development of an Integrated Test Strategy baseline for COE. Supported integration, validation, and verification of PORs in preparation for certification testing. Provided Control Point/interface specifications. Provided Software Version COE Configuration Control Board (CCB) support. Provided accreditation and certification process refinement. Conducted Integration Readiness Review for COE v1.1, and supported execution of the COE v1.1 Interoperability and Integration Event (I2E).

FY 2017 Plans:

Common Operating Environment Synchronization, Governance, Resource Planning and Implementation Oversight:
These funds provide Engineering, Orchestration, Oversight and Governance for the Army COE on behalf of the Army Acquisition Executive under the direction of the Executive Director System of Systems Engineering and Integration COE Synchronization, Governance, Resource Planning and Implementation functions: Synchronize the activities of 6 Computing Environment (CE) Working Groups, 11 Program Executive Offices, and 163 Programs of Record (PORs) to deliver the COE materiel solution necessary for the Army to field the Tactical Network envisioned in Mission Command 2020 and Mission Command 2025 guidance documents. Lead Policy Planning and Coordination with the Land/War/Net Mission Command Directorate of the G3/5/7 regarding the COE Execution Order (EXORD) and the Army Focused End-States initiative. Advise the Executive Director System of Systems Engineering and Integration and the Army Acquisition Executive on COE matters, provide assessments and reports, and prepares information to support Decision-making. Coordinates with Research Development and Engineering Centers by providing planning input for technical enabler development by COE version (v3, v4, and v5). Lead the System of Systems Engineering product development—the standards, architecture, specifications, certification guidance, and priorities guidance necessary to build the COE. Provide analysis and planning information to inform the Long Range Analysis. Process, including schedules, funding assessments, and decision support analysis. Manage COE participation in Weapons System Reviews (WSR) by developing yearly 'business process guidance" that structures how Program Managers allocate resources to inform WSR decisions and leads the COE Resource Management Working Group. Develop strategic communications to inform the Army Staff, the Acquisition. Develop Community, Industry and Government regarding the COE long term strategy.

- Common Operating Environment System of Systems Engineering:
These funds provides integrated, cross-portfolio system engineering, architecture products and cost benefit analysis and synchronized Acquisition planning for COE crossing multiple Program Executive Offices and Computing Environments (CEs).

- The funds support COE System of System Engineering activities such as:
Oversee and guide Computing Environment activities on behalf of the AAE by chairing the COE Technical Advisory Board (TAB) which is composed of the 6 CE Working Groups and 8 Program Executive Office Senior Engineers. Serve as the COE Technical Advisory Board Secretariat. Develop and schedule issues for decision. Authors and clears authoritative decision records. Develop the Annual System of Systems Directive for signature by the Army Acquisition Executive that provides program guidance to PORs. Develop Systems Engineering technical baseline guidance, standards, control point specifications, and

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templates for multiple COE versions in simultaneous development: COE v3, v4, and COE v5. All are currently in progress and at various stages of maturity. Manage COE Systems Migration Binning List which aligns systems against COE objectives. Identify, manage and vet engineering assessments and Engineering Change Proposals for Cross-Cutting Capabilities. Establishes CCC development priorities, monitors and reports on progress for 19 CCCs. Develop and update the COE Technical Reference Model—the basic logical system design for COE versions. Develop and update the COE Technical Roadmap, which provides guidance for the migration of Program of Record Systems to the COE. Coordinate systems engineering and architecture support to the development of the Integrated Systems-Capabilities Development Document and follow-ons. Develop and maintain, Control Point Specifications, the primary standard by which interoperability and backward compatibility will be maintained and assessed among COE versions. Conduct COE v3 Integration of the CEs to develop the COE v3 baseline. Lead COE Systems Management Planning: the identification of systems that will migrate to the COE infrastructure, by fielded in COE compatible versions, or divested. Monitors and reports on planning. Assesses support Systems Engineering Plans for systems that will migrate to COE. Lead Integrated Architecture Team by providing COE architecture development guidance to supporting architects in other organizations, integrating architecture contributions, and assessing products. Monitors and assesses Computing Environment Architectures developed by Program Executive Offices. Provides system of systems analysis and advice to TRADOC operational architects and CIO/G-6 technical standards developers. Develop and coordinate the COE Integrated Master Schedule that integrates 2680 lines of activities. Integrates CE WG schedules. Develop, coordinate, and published annual updates to the COE Integrated Systems, Engineering Plan and 14 annexes. Develop, codify, monitor and report COE Performance, Schedule, and Cost Metrics. Leads the COE Standards Working Group. - Common Operating Environment (COE) Technical Data Management: The funds provide cost benefit analysis, planning coordination with G3/5/7 and Training and Doctrine Command Battle-labs, Capability Development Document Coordination, Data Management, Operations and Tasking; Focused End-State 2 lead. - The funding provides the following COE Technical Data Management functions: Lead the Focused Endstate 2 Working Group—the Army Staff planning and policy group for the Common Operating Environment. Provides analysis to support weekly Councils of Colonels meetings to regarding Focus Endstate objectives, measures of performance, and execution monitoring. Provide Data Management of COE policy, guidance, specifications, Engineering Change Proposals, architecture that together provide 6 Computing Environment stakeholder communities, 185 Program Managers, TRADOC Centers of Excellence, and Army Staff element the technical, resource, and guidance information needed to build COE compliant products. Provides configuration management documents including version control, discovery of current data, data archiving, and Meta data policy. Develops SharePoint pages and applications to provide collaboration services, library storage, database services, and community tailored access. Manages information access and oversees 6 Computing Environment sub-sites.			

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Conduct COE cost analysis to support COE related decision bodies (SoS GOSC, LWN GOSC). Manage COE tasking affecting 8 PEOs, 6 Computing environments to allow COE to gather information and convey Army Acquisition Executive direction to the COE materiel development community. Manage the Better Buying Power 3.0 Modular Open System Architecture initiative, including contract support coordination, data management, data collection, analysis, weekly meetings, monthly meetings at the Service and Department Acquisition Executive level, and four major deliverables. Requires multi-Service coordination and Industry Outreach. Ensure coordination of Geospatial products: Requirements, Architecture, Engineering, Implementation, Integration, Assessment, and Certification activities associated with the Common Overlay Cross-Cutting Capability and Command Post Computing Environment application development. Provide analysis and information to the Mission Command Requirement Governance Team regarding COE level Capabilities Development Documents. Coordinate with and provides Systems of Systems Engineering Analysis products and recommendations to the TRADOC Battle Labs, especially COE materials to support Modeling and Simulation. - Common Operating Environment Certification: The funds provide for conducting COE certification planning and execution with 8 Program Executive Offices, 30 Program Manager (PM) /Product offices, Training and Doctrine Command (TRADOC), G-3/57, and Chief Information Officer (CIO)/G-6). Integration and Interoperability Event (I2E) lead for the Assistant Secretary of the Army for Acquisition, Logistics and Technology. To include: Monitor COE Integrated System Engineering Plan (ISEP)-required Phase 2 (Computing Environment) and Phase 3 (System of System COE) Software integration activities for COE versions 3 and 4; and provide COE Integration status to Land/War/Net Mission Command (LM) General Officer Steering Council (GOSC) and System of Systems GOSC with metrics and reports. Coordinate Title 10 software integration activities across eight Program Executive Officer (PEOs) and over 30 Program Manager (PM) /Product offices at CIO)/G-6 interoperability test control hub site (per DA PAM 25-1-1) for regulation-mandated Army Interoperability Certification (AIC) preparation, including managing synchronization of PEOs/PMs/CEs delivery of Hardware, Software and engineering support for System of Systems Integration. Co-chair Configuration Control board with G-3/5/7 to determine which systems, by software versions, are coming to biannual AIC events (through evaluation of operational and technical risk reduction impact) across multiple developmental and fielded tactical network baselines. Co-chair Executive Scoring Committee (with TRADOC and CIO/G-6) to adjudicate AIC test incident reports and monitor resolution to closure. Coordinate with CIO/G-6 for conduct of Certification Readiness Reviews for each AIC test event. Mediate between PEOs/PMs for adjudication of requirements Engineering Change Proposals (through a Program Change Request process) with TRADOC. Conduct daily hot-wash detailed engineering coordination sessions with integration engineers distributed across the Federation of Net-Centric sites an accredited network at six locations. Monitor and report IAVA and Configuration Management scan processes status at multiple integration sites for Cyber defense certification preparation. Validate test floor architecture and test case development for integration and testing at CIO/G-6-designated sites. Make recommendation through Executive Director SoSE&I to HQDA CIO/G-6 and G-3/5/7 when progress at I2E is sufficient to state that			

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the baseline is ready to enter formal AIC test. Provide System of System engineering analysis to the Focused End-State 4 working group regarding Mission Command Network Interoperability with Joint, NATO and Coalition Networks. - Common Operating Environment Systems Engineering and Integration Support: The funds support system of systems engineering planning associated with the Operational Assessment and Test venues: Coordinates with 6 Common Environment (CE) Working Groups (WG)s and over 30 Programs of Record to align materiel development schedules, risk mitigation events, against operational assessment venues. Assesses Performance, Schedule, and Cost risks to support decisions associated with COE version baseline fielding and test planning by the G3/5/7 and CIO/G6. - Effort to develop and maintain COE specific IMS: These funds provide SMEs to develop and maintain an Integrated Master Schedules for SoSE&I's Common Operating Environment (COE) efforts. Close out the IMS for FY16, maintain the IMSs for FY17 and develop initial IMSs for FY18 and FY19. In support of COE efforts collect and analyze sub-schedule performance against the baseline Integrated Master Schedule to identify schedule risks. Validate that established integration points are achievable and, if not, identify the schedule risk. Analyze schedule performance against schedule baseline, identify variances and their causes, and identify risks and/or impacts to critical path. Perform "what if" schedule analysis of alternative program courses of action to determine impact on schedule critical path. Update and post Schedules on SharePoint for visibility and increased collaboration across ASA(ALT). Participate in COE working groups. Provide scheduling reports and briefings to meet the needs of the COE communities. It also includes: COE IMS and briefing and reports from IMS analysis. - Mission Command COE Architecture: These funds provides the Army's leadership and materiel developers with the necessary modernization planning, critical path analysis, risk analysis and mitigation planning, system of systems engineering (SOSE), technical analysis and architectural products to support Common Operating Environment (COE) development. This project explicitly includes critical COE architecture and governance development tasks. Conduct Verification &Validation (V&V) of Common Element Integrated System Capability Development Document (CDD) Standard Views (SV) and Service View (SvcV) architecture products. It is ASA(ALT)'s responsibility to V&V the Joint Capabilities Integration Development System (JCIDS) Standard View (SV) and SvcV Department of Defense Architecture Framework (DoDAF) products for submission as a Capability Development Document (CDD). Perform; V&V on the COE v1.0/v1.10 Integrated Architecture/Basis of Issue/Capability Set level SVs and SvcVs architectures in preparation for AIC and operational testing, and V&V on the v3.0 COE Integrated Architecture. Positioning Navigation Timing (PNT) Command Control Communication (CCC) System of System architecture will be included. Align the CE-Level DoDAF Architecture Design in MagicDraw according to the guidance strategized out in the MC to avoid duplication in document			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
development across ASA(ALT). This includes supporting the TRADOC Sun Setting Process for current requirements documents and the ASA (ALT) COE requirements convergence strategy, with a feed into COE and Capability Set Architecture. Detailed Tasks include: Build Trace for the COE requirements and their relations to other source and authoritative documents using the Army IRF. This includes the requirements for Position, Navigation, and Timing (PNT) CCC, Standard and Sharable Geospatial Foundation CCC, Common Overlay CCC, and Chat CCC. Develop and manage COE SoS Technical Requirements (Functional and Non Functional Requirements) including Requirements for Position, Navigation, and Timing (PNT) CCC, Standard and Sharable Geospatial Foundation CCC, Common Overlay CCC, and Chat CCC. Define and Build Trace between COE Technical Requirements and required COE/CE Architecture products. Provide guidance document, SOPs, training, IT support to the COE/CE users to develop the COE/CE requirements including Position, Navigation, and Timing (PNT) IPT. Conduct COE requirements convergence analysis using Army IRF to identify requirements duplications, commonalities, gaps, and define how current COE system requirements will be re-architected in terms of apps, widgets, and services to support the COE v3.0 and beyond-Provide and maintain the Army IRF Environment for the COE/CE community to develop COE/CEs/CCCs requirements. The environment currently has over 160 documents (35 Army Concepts Documents, 88 JCIDS Operational Requirements Documents, 35 Documents that identifies Army Gaps, 10 Authoritative and references documents needed for developing requirements and architecture products). Provide guidance and support to the current Army IRF Users in developing and managing SoS requirements for COE /CE/ CCCs requirements (PEO C3T, PM MC, PM APNT, SoSE&I, MC RGT, MC CoE) and new users. Use Case to generate the Unified System/Service DoDAF Product Design for COE Integrated Architecture v3.0. Assess the readiness of the Integrated Architecture against the Control Point Specifications for COE v3.0. Continue architecture product evolution in Magic Draw of the Unified System/Service DoDAF Product Design for COE Integrated Architecture for v4.0 and v5.0. Changes and updates will be vetted with the COE Architecture IPT at the appropriate time. Support Risk Assessment of emerging COE architectures for Cyber impacts. - System of System Common Operating Environment Requirements Engineering: These funds provides SoSE&I, Program Managers and TRADOC with the necessary Subject Matter Expertise (SME) to develop, analyze, and manage the complexity of the Common Operating Environment (COE) Requirements, existing Program of Record (POR)/systems requirements, Cross-Cutting Capabilities (CCCs), the new Computing Environment (CE)-level documents and governance and coordination of the Federated Integration Environment (FIE). The FIE reduces risk by supporting integration and interim operability assessments throughout the product lifecycle using a Phases Integration approach. ***FY 2018 Plans:***			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Engineering Synchronization Oversight and Governance for the Army SoS Common Operating Environment (COE); cross-portfolio system engineering and architecture products; synchronize acquisition planning for COE crossing multiple PEOs and Computing Environments (CEs); and serve as the DA Staff advocate for COE and Cross Cutting Capabilities (CCCs). These funds provide continued Oversight and Governance for the Army COE on behalf of the Army Acquisition Executive to include Synchronization of planned COE efforts to deliver the COE materiel solution necessary for the Army to field the Tactical Network envisioned in Mission Command 2020 and Mission Command 2025 guidance. Lead the COE Standards Working Group and provide Data Management of COE policy, guidance, specifications, Engineering Change Proposals, architecture. Advise the Executive Director System of Systems Engineering and Integration and the Army Acquisition Executive on COE matters, provide assessments and reports, and prepares information to support Decision-making. Synchronize analysis, planning information and presentations to inform the Strategic Portfolio Analysis Review(SPAR).			
Title: Cyber ***Description:*** Cyber Security engineering, architecture and development tasks necessary to create effective, affordable and secure network capabilities that address critical gaps, meet Mission Command Network (MCN) 2020 objectives and/or Force 2025 and Beyond (F2025B) initiatives. This effort includes analysis of integrated capabilities, requirements decomposition and alignment, and resource and acquisition synchronization. ***FY 2016 Accomplishments:*** These funds provided for the following: - Cyber Programs: Supported Cyber materiel development processes by continually researching innovative acquisition process as well as utilizing science and technology resources to take advantage of the available technology. Streamlined and rapid Cyber materiel development processes support the Army Cyber mission forces as well as Army life-cycled managed systems and networks against emerging/evolving Cyber threats. - Mission Assurance and Compliance: Continued to improve the vulnerability management system, ensuring standardized compliance processes that provide flexibility to Program Managers and Commanders, allowing them to make decisions based on the vulnerability, risk and operational importance of the system or network; this provides Army Mission Assurance and Compliance processes and methodologies that are tailored to the system, network, and operations. - CIO Governance: Continued to manage the acquisition domain portfolio and business systems for ASA(ALT). Provided acquisition domain strategy, system binning requests, system assertions, system compliance reviews, problem statement	2.678	2.086	3.256

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018

review, CIO policy, system architecture, E2E process, policy and governance, data center consolidation, data management, CIO operations management, policy and governance and integration of Cyber and CIO resources.

- Cyber security: Assisted in the improvement of the system and network accreditation processes for life-cycle managed systems, that streamlined the processes for quicker accreditation; this allowed systems and networks to move through the development, testing and fielding processes, supporting rapid fielding of cyber capabilities and resilient systems to Warfighters.

- Cyber Architecture: Provided cyber architecture subject matter expertise and cross PEO architecture integration, including systems engineering analysis and requirements decomposition of cyber requirements, and product support for Capability Set Fielding and Engineering and Integration architecture efforts.

FY 2017 Plans:

These funds support critical ASA(ALT) Cyber Focal SMEs for synchronization, analysis and integration of Cyber functions and products.

- Cyber Programs:

Provide oversight, synchronize and coordinate requirement development, decomposition and validation efforts for Requirements Definition Packages and Capability Drops based on validated Information Systems (IS) capability documents in support of efforts to provide cutting edge cyber capability to the warfighter. Oversee, synchronize and coordinate fielding of cyber capabilities utilizing the Cyber Acquisition Task Force. These capabilities include defensive cyberspace operation, situational awareness and department of defensive information network Socialize efforts with the Cyber stakeholders and key leadership.

Manage the synchronization between program offices, HQDA, and the Army Cyber Command regarding efforts for the drafting, validation and execution of operational needs statements, office of primary responsibility, materiel development decisions.

Co-chair the Cyber Acquisition, Requirements, and Resourcing Operational Planning Team. The CARR is responsible for recommending prioritization of validated Cyberspace requirements in view of operational imperatives, estimated costs, and available resources; approving an annual plan for cyberspace capability development that assists materiel and capability developers in forecasting resourcing requirements; measuring progress from the prior year's annual plan, in order to align future requirements and inform stakeholders of the accomplishments in attaining Cyberspace capabilities in meeting the above objectives; evaluating and providing recommendations on priorities for cyber-related special program requirements to ensure deconfliction, cross-functional review, and integration of special program issues, with sufficient participation of stakeholders.

Develop integrated cyber acquisition strategies across multiple PoRs and Program Executive Offices. Participates in the Army Cyberspace Council; maintain the Army's Cyber Acquisition strategy/plan to reflect changes in technology and policy/ regulation and to address emerging cyber requirements. Continue to execute cyber innovation challenges by hosting meetings, conferences, conducting market research, working with the Army Contracting Command, Program Executive Office and the Army

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Cyber Command. Expand market research to include academia, Industry, International organizations, and specified cooperative security efforts in order to identify and utilize common cyber efforts. - Mission Assurance and Compliance: Conduct initial full baseline scoring of ASAALT systems using the existing criteria in the Operational Risk Decision Framework. Further refine the criteria for future scoring based on Army Cyber Command criteria weighting and available system documentation. Participated in the existing Insider Threat IPT Lines of Effort (LOE) to mitigate the risk of insider threat, ensure cross PEO equities and resourcing requirements were identified to implement the findings in the IPT. Continue to improve the vulnerability management system by participating in the PEO C3T and NETCOM vulnerability management pilot and develop the plan for follow on activities to implement the lessons learned and Tactics, Techniques and Procedures across the ASAALT portfolio. Conduct cyber assessments using the Mission Assurance and Compliance processes and methodologies tailored to the system, network, and operations to ensure cyber is a part of the overall systems engineering assessments of Programs of Record. Continue to provide HQ staff support to the PEO Information Assurance Program Managers in the area of Command Cyber Readiness Inspections, Tactical Public Key Infrastructure, and Cyber Tool Implementation. Support to Other SoSE&I Directorates: Conduct requirements identification, decomposition, and engineering support to integrate cyber into the Common Operating Environment, including the development of the Tactical PKI Cross Cutting Capability, input to Implementation plans, integrated systems engineering plans, and integrated architecture. Conduct requirements identification, decomposition, and engineering support to develop a holistic approach to identity and access management and Public Key Infrastructure. Efforts include a Tactical PKI Exception Memorandum, Assessment of Tactical and Strategic PKI and IdAM based authentication, Enterprise Directory Services (EDS), and Enterprise Tactical Identity and Email Service (ETIES). Continue to develop the software vulnerability architecture to provide a system of system analysis tool to determine high risk systems to cyber vulnerabilities based on access to enterprise capabilities and location on the actual tactical network. Effort also includes the development of the FY 16 assessment plan for mission assurance analysis to be conducted through SOSEI Engineering and Analysis Risk Reduction yearly analysis plan. - Cyber Security: Lead ASA(ALT) Cybersecurity Program; accredit, validate, and oversee ASA(ALT) systems cybersecurity activities and manage cybersecurity workforce. Continue providing support to PEO Information Assurance Program Managers regarding cybersecurity including risk management framework, eMASS, MS4X and ISSP, FISMA compliance, and ACAS. Provide cybersecurity oversight for PM PNT, USAASC, and DASA-P information systems through consultation, policies, and Authorizing Official (AO) authority. Conduct Risk Management Framework (RMF) assess only activities for SoSE&I owned and sponsored systems, lead RMF tactical overlay development.			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Coordinate and assist with red and blue team efforts for ASA(ALT) portfolio, providing support to Mission Assurance/Resilience in their assessment activities, identifying vulnerabilities in ASA(ALT) information systems throughout the acquisition lifecycle. Perform cybersecurity engineering analysis support for SoSE&I owned and sponsored information systems, including architecture reviews to identify potential vulnerabilities and risk mitigation techniques. Support Cyber Collective Training initiative led by PEO STRI. - Support Engineering and Integration: Lead the Lab Based Risk Reduction cybersecurity effort, coordinating blue team activities for LBRR, transitioning lessons learned from the lab into the field environment. Conduct compliance scans in preparation for the blue team assessment, identifying potential vulnerabilities and ensuring information system owners remediate or mitigate issues. Continue supporting NIE/AWA Strategic Planning Reviews (SPRs) and Bullpens as the TRIAD lead for cybersecurity for both efforts. Conduct architecture reviews and golden vehicle checkout, identifying potential vulnerabilities and risk mitigation techniques. Interface with appropriate agencies for certification issues and cross domain solutions support. - Engineering Support to the Cyber Focal teams and related Cyber engineering tasks where a Cyber Subject Matter Expert (SME) is required or valuable: These funds provide for Cyber SME support to Cyber Programs to decompose in coming requirements documents for the purpose of gap identification, redundant capability definition or requirement between multiple requirements documents, requirement definition in support of resourcing said requirement(s). Cyber SME assistance to Cybersecurity/Cyber Focal with red and blue team efforts for ASA(ALT) portfolio. Cyber SME support to Mission Assurance/Resilience with software vulnerability/protection architecture support and coordination between Cyber Mission Assurance / Resilience and E&I Architecture team. Support with the way forward for Public Key Infrustructure (PKI) and Identity and Access Management (IdAM). Provides support to other Directorates: Support to CIO Governance to integrate Army Acquisition Business Enterprise Architectures (ABBEA) and the Army-Business Enterprise Architecture (A-BEA), Engineering and Integration Team: support to E&I to include Focused End State mission essential and mission enhancing capabilities requirements language (along with G-3/5/7) and support to NIE 17.2 and red/blue teaming and Strategic Planning Reviews (SPRs). - Resourcing and Budget: Coordinate resourcing requirements for emerging threats, defensive/offensive cyberspace operation requirements, and mission assurance and compliance requirements with program offices, develop consolidated Army Cyber picture for iWSR/LIRS/POM, present resourcing requirements at WSR reviews. Develop responses to congressional inquiries. Manage and coordinate Cyber BRP efforts. These resourcing activities are imperative to ensure cyber capabilities are provided to the war fighter and Army systems are defendable against cyber threats.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
- Effort to develop and maintain Cyber specific IMS These funds provide for SMEs to develop and maintain an Integrated Master Schedules for SoSE&I's Cyber efforts. Close out the IMS for FY16, maintain the IMSs for FY17 and develop initial IMSs for FY18 and FY19. In support of Cyber efforts collect and analyze sub-schedule performance against the baseline Integrated Master Schedule to identify schedule risks. Validate that established integration points are achievable and, if not, identify the schedule risk. Analyze schedule performance against schedule baseline, identify variances and their causes, and identify risks and/or impacts to critical path. Perform "what if" schedule analysis of alternative program courses of action to determine impact on schedule critical path. Update and post Schedules on SharePoint for visibility and increased collaboration across ASA(ALT). Participate in Cyber working groups. Provide scheduling reports and briefings to meet the needs of the Cyber communities. This includes: Cyber IMS and briefings and reports from IMS analysis.			
FY 2018 Plans: These funds support critical Cyber SMEs for synchronization, analysis and integration of Cyber functions and products. Cyber Programs: - Provide oversight, governance, synchronize and coordinate across the Army for cyberspace operations requirements and capabilities. - Manage the synchronization of multiple efforts between program offices, HQDA, and the Army Cyber Command regarding efforts for the drafting, validation and execution of operational needs statements, appointing an office of primary responsibility, materiel development decisions and other required programmatic support. - Participate in the prioritization of Cyberspace requirements in view of operational imperatives, estimated costs, and available resources; approving an annual plan for cyberspace capability development that assists materiel and capability developers in forecasting resourcing requirements; measuring progress from the prior year's annual plan and forecasting future requirements. - Maintain the Army's Cyber Acquisition strategy/plan to reflect changes in technology and policy/regulation and to address emerging cyber requirements. - Continue to execute cyber innovation challenges by hosting meetings, conferences, conducting market research, working with the Army Contracting Command, PEO and the Army Cyber Command (ARCYBER) and other efforts. - Expand market research to include academia, Industry, International organizations, and specified cooperative security efforts in order to identify and utilize common cyber efforts. Cyber engineering tasks: - Decompose incoming requirements documents for the purpose of gap identification, redundant capability definition or requirement between multiple requirements documents, requirement definition in support of resourcing requirement(s).			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
- Assist in identifying possible vulnerabilities in current weapon systems and analyzing current requirement solutions' concept of operations. - Identify potential commercial industry solutions and techniques used to protect from known and unknown cyber threats. - Analyze what the Army science and technology experts are highlighting as key research areas as it relates to defensive and offensive cyber operations. - Decompose the cyberspace operation requirements to break out the defined Key Performance Parameters and Key System Attributes into clearly defined capabilities, measures of performance and effectiveness, and risks. Cyber Resource Synchronization: - Provide guidance and synchronization of ASA(ALT) PEOs and PMs to Army leadership guidance for cyber resourcing and budget efforts. Serve as liaison to ARCYBER, HQDA, and acquisition community with regards to cyber funding. - Prepare reclamas and attend Congressional hearing appeals for cyberspace operations funding marks. - Provide lead coordination and synchronization across ARCYBER, HQDA, and acquisition community for cyclical Planning, Programing, and Budget Execution events. - Lead coordination and synchronization across acquisition community and HQDA for Budget Estimate Submissions and President's Budget P&R Form submissions. - Consolidate and review cost estimates for cyber PoRs/non-PoRs. - Analyze applicable regulations, policy statements, and program guidelines that impact cyber programs. - Provide data, economic, and cost analyses to develop estimates to support program requirements such as program milestones and required DA and OSD reporting.			
Title: Facilities and IT Support ***Description:*** Provides funding for infrastructure/facilities and IT support. ***FY 2016 Accomplishments:*** Provided funding for infrastructure/facilities. It included the cost for government IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services. ***FY 2017 Plans:*** Provides funding for infrastructure/facilities. It includes the cost for government IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services. ***FY 2018 Plans:***	0.971	0.533	0.582

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Provides funding for infrastructure/facilities. It includes the costs for purchasing/leasing hardware, software, computers, communications equipment and services.			
Accomplishments/Planned Programs Subtotals	15.802	14.166	15.508

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• DY3: *NIE Test & Evaluation*	10.768	65.844	58.395	-	58.395	61.482	49.699	45.735	50.051	Continuing	Continuing
• DY4: *Network Integration Support*	13.700	-	-	-	-	-	-	-	-	0.000	13.700
• DY5: *Production/Field Coordination for Capability Sets*	3.486	3.960	4.261	-	4.261	4.349	4.434	4.524	4.502	Continuing	Continuing
• DY6: *Brigade and Platform Integration Support*	44.164	-	-	-	-	-	-	-	-	0.000	44.164
• DZ6: *Army Integration Management & Coordination*	8.366	5.746	6.775	-	6.775	6.922	7.065	7.217	7.367	Continuing	Continuing
• FG7: *Emerging Technology Initiatives*	-	56.939	60.421	-	60.421	39.991	39.985	35.995	41.020	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project does not have any requirement for direct procurement of hardware or software.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Army System of System Engineering and Analysis	TBD	TBD : Various	22.378	9.196	Nov 2015	8.393	Nov 2016	-		-		-	0.000	39.967	0.000
Common Operating Environment (COE)	TBD	TBD : Various	6.858	2.957	Nov 2015	3.154	Nov 2016	-		-		-	0.000	12.969	0.000
Cyber	TBD	TBD : Various	0.000	2.678	Nov 2015	2.086	Nov 2016	-		-		-	0.000	4.764	0.000
Army System of System Engineering and Analysis Core Labor	Allot	SoSE&I : Various	0.000	-		-		4.479		-		4.479	Continuing	Continuing	0.000
Army System of System Engineering and Analysis Matrix Labor	MIPR	CERDEC : Various	0.000	-		-		0.982		-		0.982	Continuing	Continuing	0.000
Army System of System Engineering and Analysis SETA Labor	C/CPFF	TBD : Various	0.000	-		-		1.091		-		1.091	Continuing	Continuing	0.000
Army System of System Engineering and Analysis FFRDC Labor	FFRDC	MITRE : Various	0.000	-		-		3.956		-		3.956	Continuing	Continuing	0.000
Common Operating Environment (COE) Core Labor	Allot	SoSE&I : Various	0.000	-		-		1.161		-		1.161	Continuing	Continuing	0.000
Cyber Core Labor	Allot	SoSE&I : Various	0.000	-		-		2.076		-		2.076	Continuing	Continuing	0.000
Cyber Matrix Labor	MIPR	CERDEC : Various	0.000	-		-		0.300		-		0.300	Continuing	Continuing	0.000
Cyber SETA Labor	C/CPFF	TBD : Various	0.000	-		-		0.248		-		0.248	Continuing	Continuing	0.000
Cyber FFRDC Labor	FFRDC	MITRE : Various	0.000	-		-		0.633		-		0.633	Continuing	Continuing	0.000
		Subtotal	29.236	14.831		13.633		14.926		-		14.926	-	-	0.000

Remarks

Note: 1
- Program Activities performed at Aberdeen Proving Ground (MD), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), TACOM (Warren, MI)

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Facility and IT Support	TBD	Various: Note: 1 : TBD	2.416	0.971	Nov 2015	0.533	Nov 2016	0.582	Nov 2017	-		0.582	0.000	4.502	0.000
		Subtotal	2.416	0.971		0.533		0.582		-		0.582	0.000	4.502	0.000

Remarks

Note:1
- Program Activities performed at Aberdeen Proving Ground (MD), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), TACOM (Warren, MI)

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	31.652	15.802		14.166		15.508		-		15.508	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
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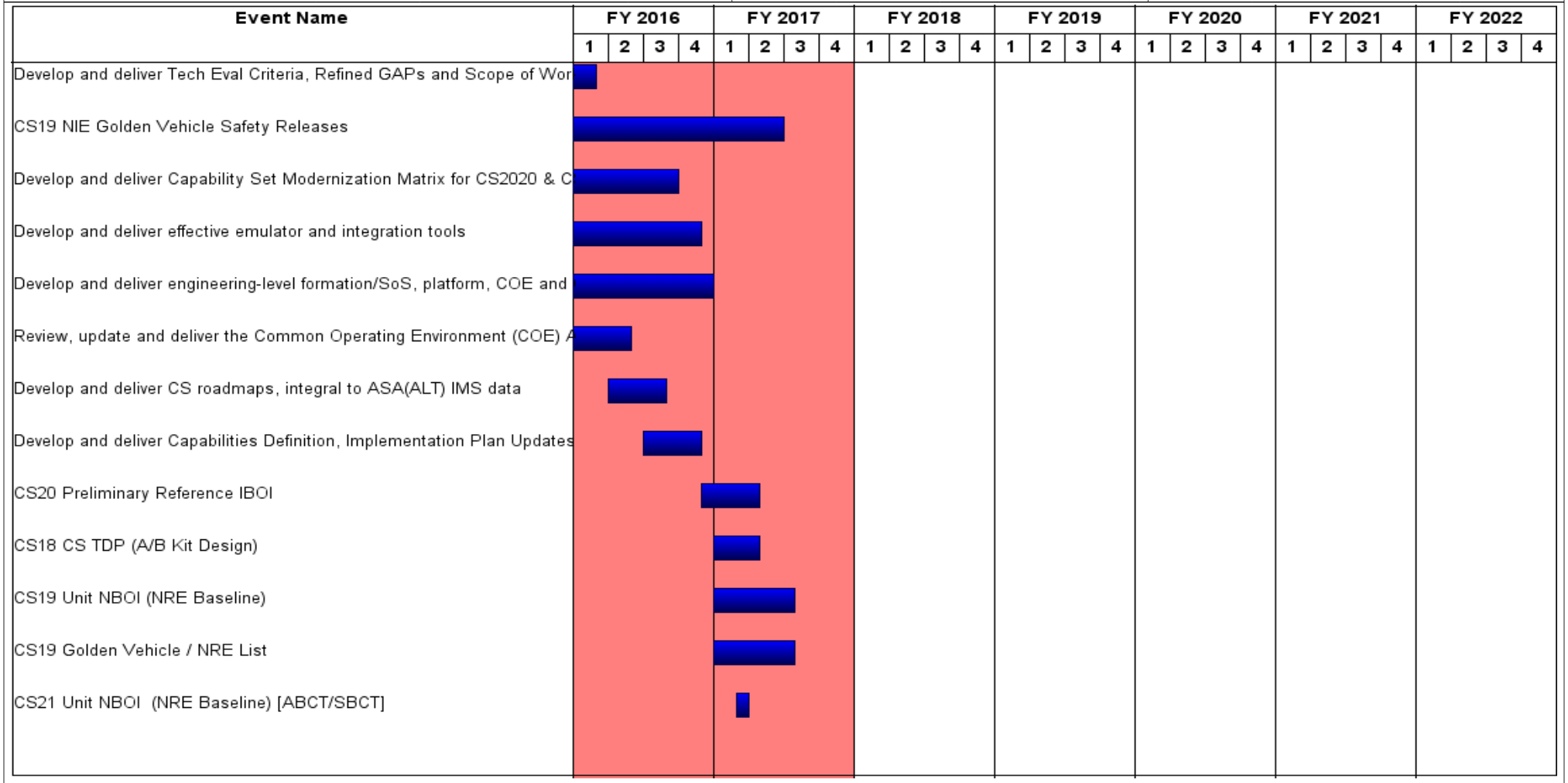

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
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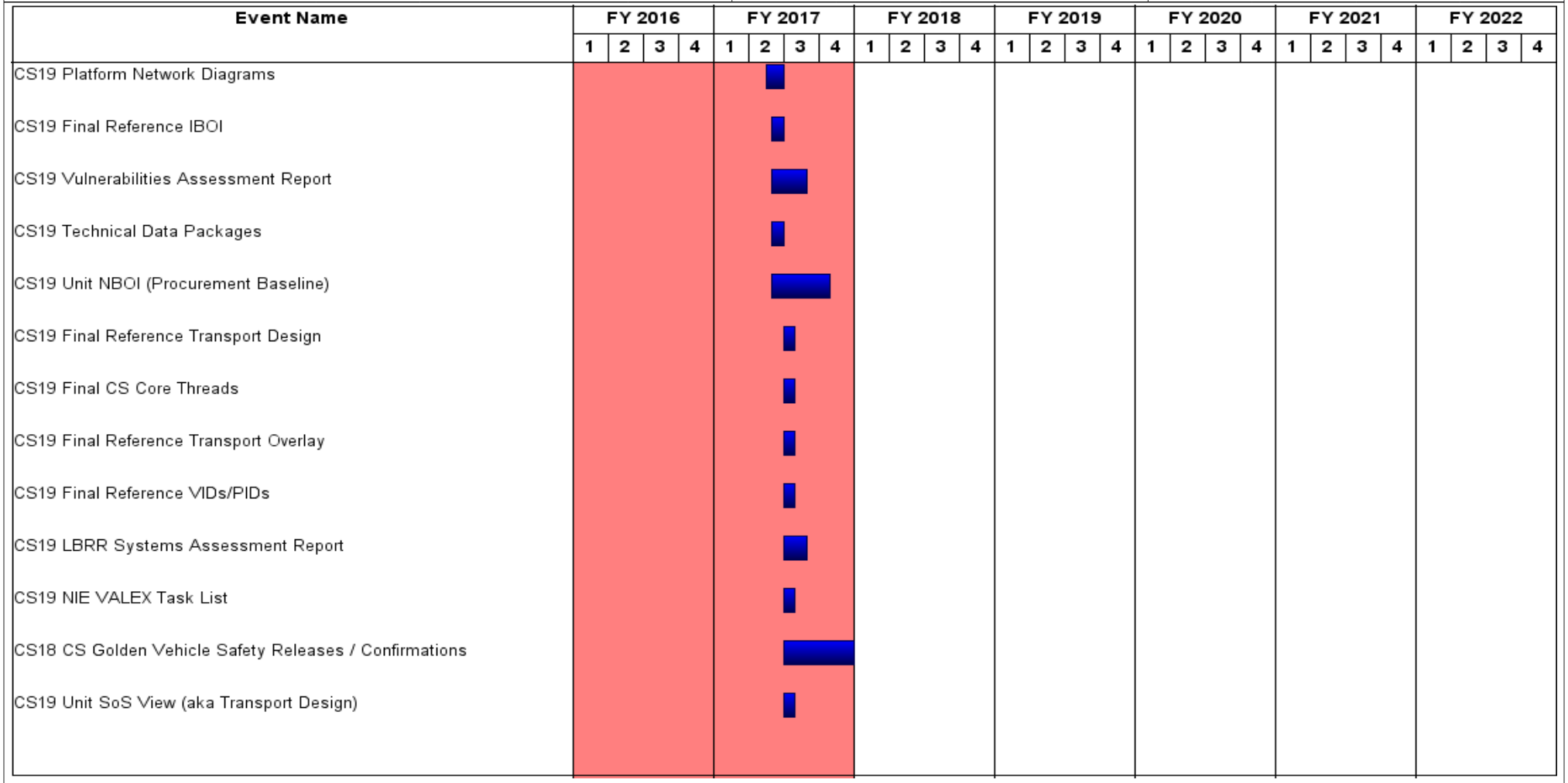

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
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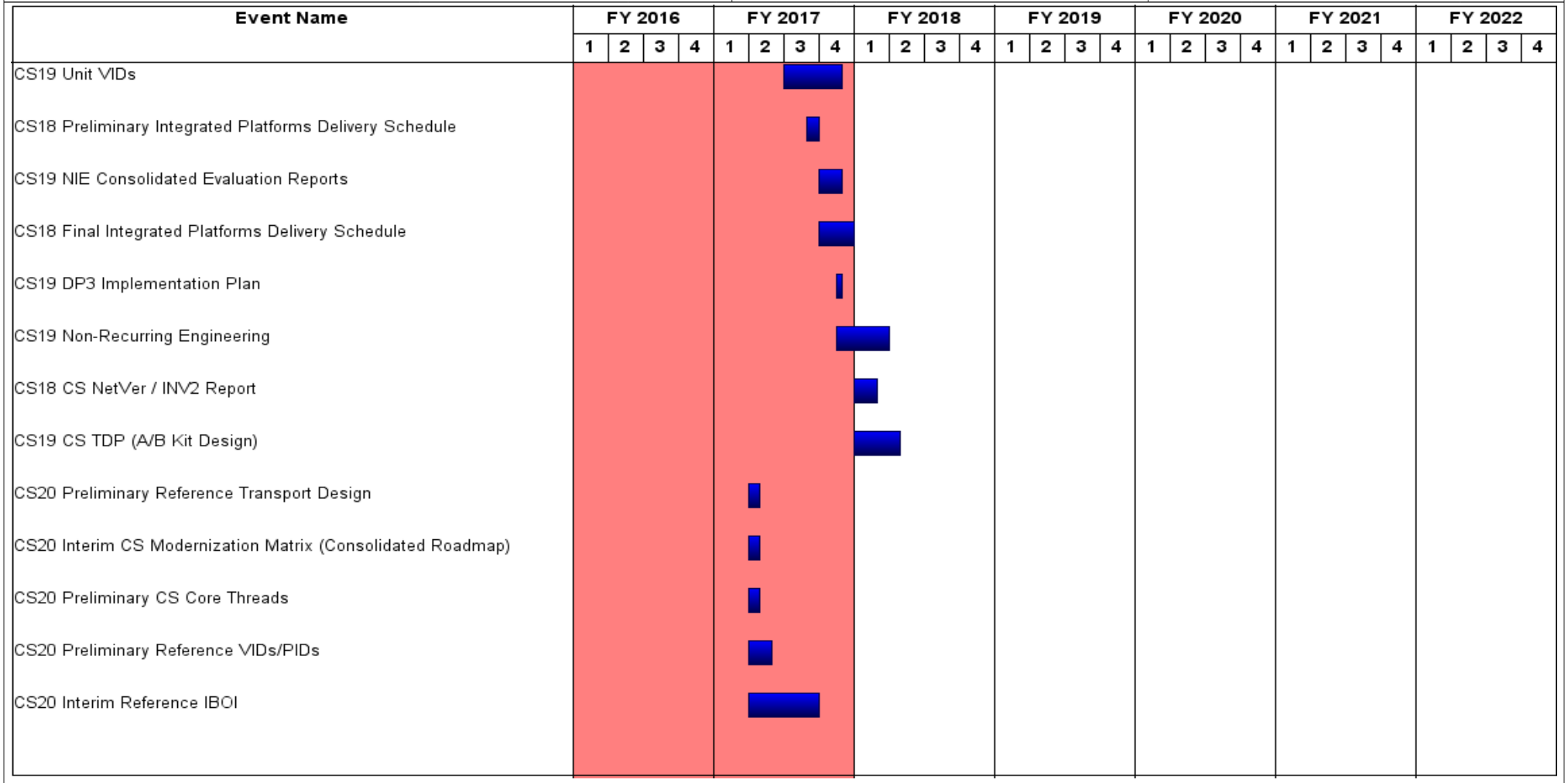

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
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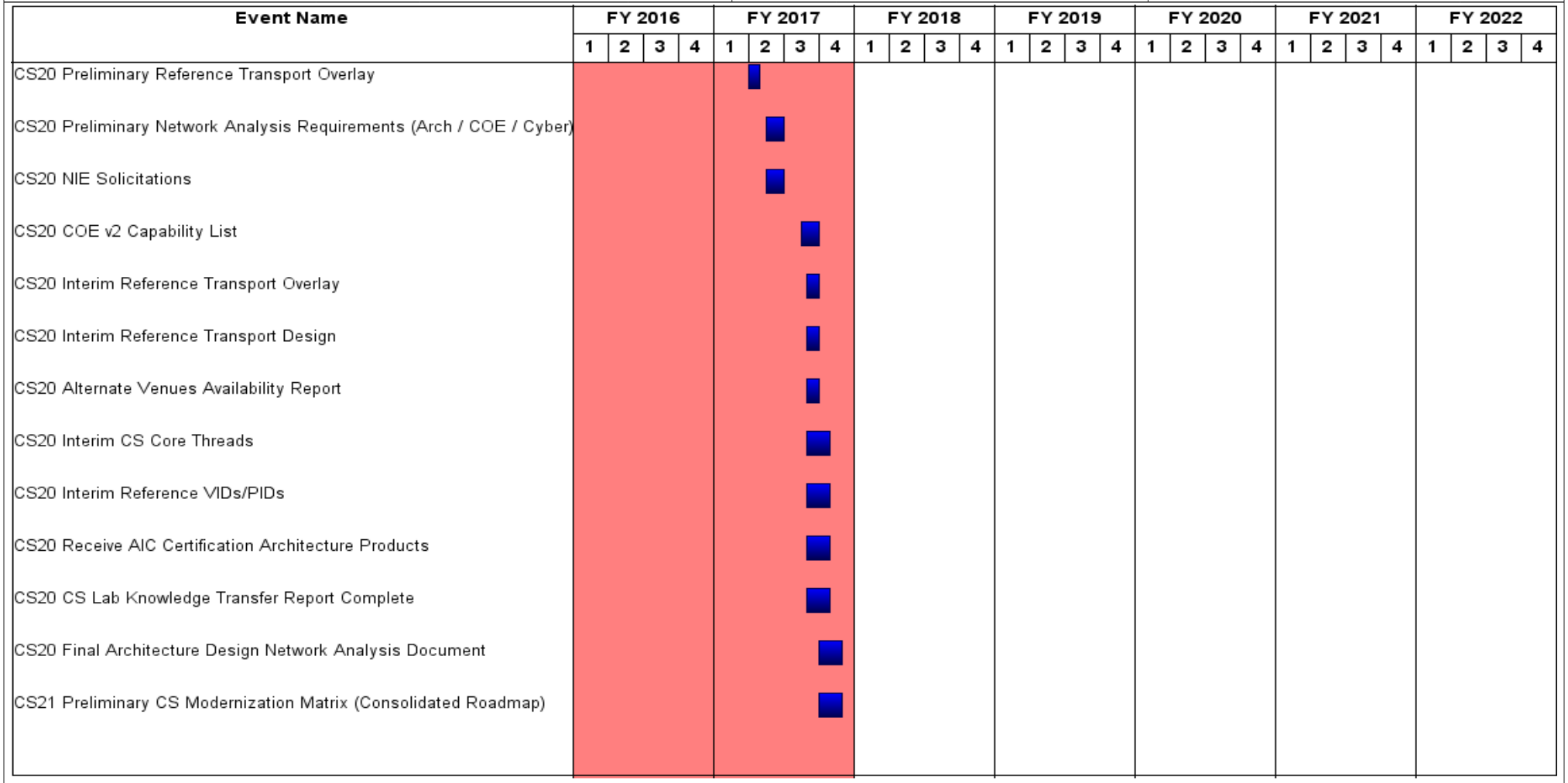

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
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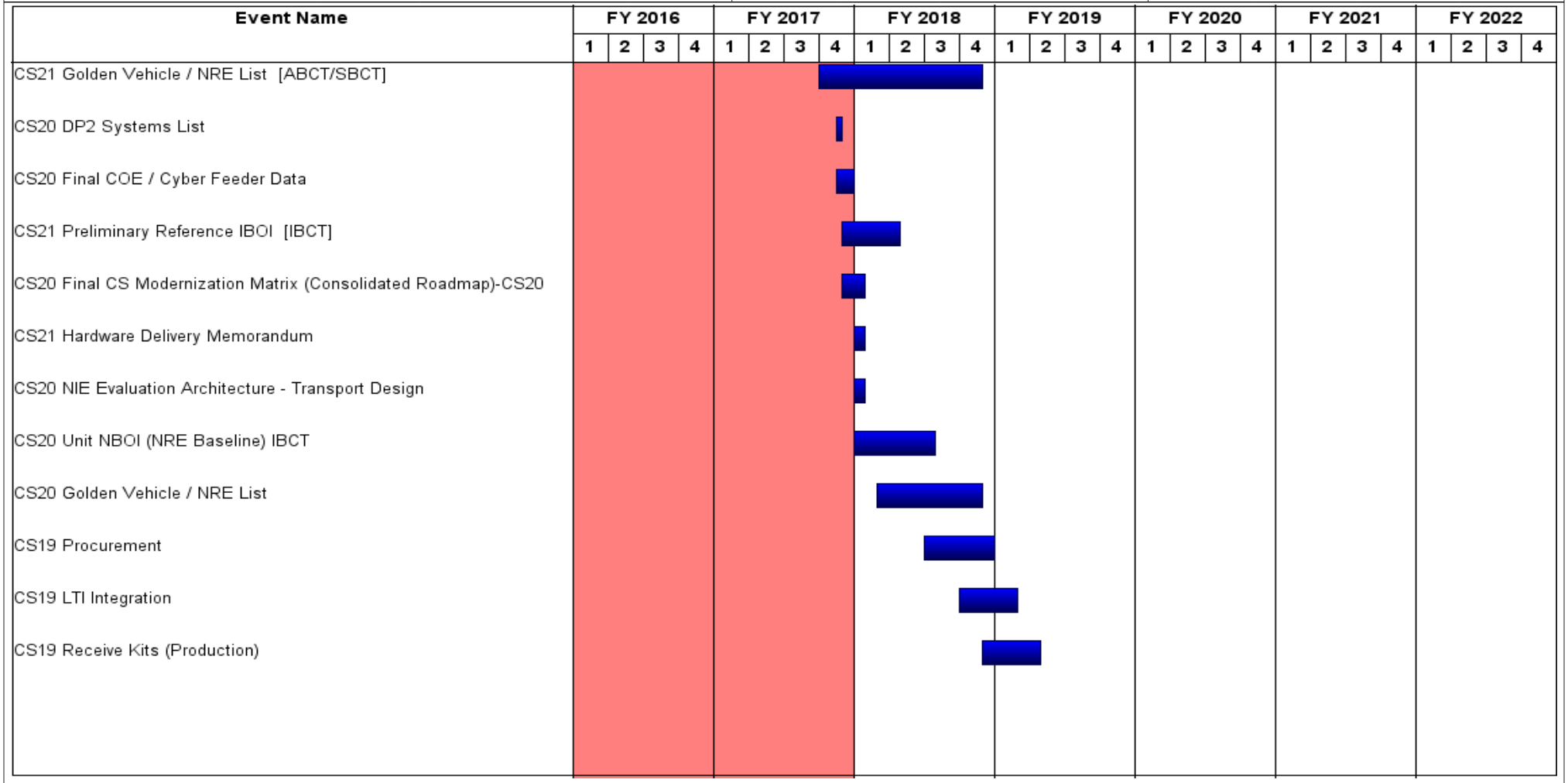

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Develop and deliver Tech Eval Criteria, Refined GAPs and Scope of Work for NIE16	4	2014	1	2016
CS19 NIE Golden Vehicle Safety Releases	2	2015	2	2017
Develop and deliver Capability Set Modernization Matrix for CS2020 & CS2025	4	2015	3	2016
Develop and deliver effective emulator and integration tools	4	2015	4	2016
Develop and deliver engineering-level formation/SoS, platform, COE and Cyber arc	1	2016	4	2016
Review, update and deliver the Common Operating Environment (COE) Assessment Cri	1	2016	2	2016
Develop and deliver CS roadmaps, integral to ASA(ALT) IMS data	2	2016	3	2016
Develop and deliver Capabilities Definition, Implementation Plan Updates,	3	2016	4	2016
CS20 Preliminary Reference IBOI	4	2016	2	2017
CS18 CS TDP (A/B Kit Design)	1	2017	2	2017
CS19 Unit NBOI (NRE Baseline)	1	2017	3	2017
CS19 Golden Vehicle / NRE List	1	2017	3	2017
CS21 Unit NBOI (NRE Baseline) [ABCT/SBCT]	1	2017	1	2017
CS19 Platform Network Diagrams	2	2017	2	2017
CS19 Final Reference IBOI	2	2017	2	2017
CS19 Vulnerabilities Assessment Report	2	2017	3	2017
CS19 Technical Data Packages	2	2017	2	2017
CS19 Unit NBOI (Procurement Baseline)	2	2017	4	2017
CS19 Final Reference Transport Design	3	2017	3	2017
CS19 Final CS Core Threads	3	2017	3	2017
CS19 Final Reference Transport Overlay	3	2017	3	2017
CS19 Final Reference VIDs/PIDs	3	2017	3	2017

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY7 / *Army Systems Engineering, Architecture & Analysis*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CS19 LBRR Systems Assessment Report	3	2017	3	2017
CS19 NIE VALEX Task List	3	2017	3	2017
CS18 CS Golden Vehicle Safety Releases / Confirmations	3	2017	4	2017
CS19 Unit SoS View (aka Transport Design)	3	2017	3	2017
CS19 Unit VIDs	3	2017	4	2017
CS18 Preliminary Integrated Platforms Delivery Schedule	3	2017	3	2017
CS19 NIE Consolidated Evaluation Reports	4	2017	4	2017
CS18 Final Integrated Platforms Delivery Schedule	4	2017	4	2017
CS19 DP3 Implementation Plan	4	2017	4	2017
CS19 Non-Recurring Engineering	4	2017	1	2018
CS18 CS NetVer / INV2 Report	1	2018	1	2018
CS19 CS TDP (A/B Kit Design)	1	2018	2	2018
CS20 Preliminary Reference Transport Design	2	2017	2	2017
CS20 Interim CS Modernization Matrix (Consolidated Roadmap)	2	2017	2	2017
CS20 Preliminary CS Core Threads	2	2017	2	2017
CS20 Preliminary Reference VIDs/PIDs	2	2017	2	2017
CS20 Interim Reference IBOI	2	2017	3	2017
CS20 Preliminary Reference Transport Overlay	2	2017	2	2017
CS20 Preliminary Network Analysis Requirements (Arch / COE / Cyber)	2	2017	2	2017
CS20 NIE Solicitations	2	2017	2	2017
CS20 COE v2 Capability List	3	2017	3	2017
CS20 Interim Reference Transport Overlay	3	2017	3	2017
CS20 Interim Reference Transport Design	3	2017	3	2017
CS20 Alternate Venues Availability Report	3	2017	3	2017
CS20 Interim CS Core Threads	3	2017	4	2017

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY7 / *Army Systems Engineering, Architecture & Analysis*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CS20 Interim Reference VIDs/PIDs	3	2017	4	2017
CS20 Receive AIC Certification Architecture Products	3	2017	4	2017
CS20 CS Lab Knowledge Transfer Report Complete	3	2017	4	2017
CS20 Final Architecture Design Network Analysis Document	4	2017	4	2017
CS21 Preliminary CS Modernization Matrix (Consolidated Roadmap)	4	2017	4	2017
CS21 Golden Vehicle / NRE List [ABCT/SBCT]	4	2017	4	2018
CS20 DP2 Systems List	4	2017	4	2017
CS20 Final COE / Cyber Feeder Data	4	2017	4	2017
CS21 Preliminary Reference IBOI [IBCT]	4	2017	2	2018
CS20 Final CS Modernization Matrix (Consolidated Roadmap)-CS20	4	2017	1	2018
CS21 Hardware Delivery Memorandum	1	2018	1	2018
CS20 NIE Evaluation Architecture - Transport Design	1	2018	1	2018
CS20 Unit NBOI (NRE Baseline) IBCT	1	2018	3	2018
CS20 Golden Vehicle / NRE List	1	2018	4	2018
CS19 Procurement	3	2018	4	2018
CS19 LTI Integration	4	2018	1	2019
CS19 Receive Kits (Production)	4	2018	2	2019

Note

KEY:
Armored Brigade Combat Team (ABCT) / Infantry Brigade Combat Team (IBCT) / Stryker Brigade Combat Team (SBCT)
Basis of Issue (BOI) / Platform Interconnect Diagram (PID) / Transport Design (TD) / Data Flow Diagram (DFD)
Network Design Book (NDB) / Vehicle Integration Design (VID) / Non-Recurring Engineering (NRE) / Lower Tactical Internet (LTI)

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / *Brigade Analysis, Integration and Evaluation*	Project (Number/Name) DZ6 / *Army Integration Management & Coordination*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
DZ6: *Army Integration Management & Coordination*	-	8.366	5.746	6.775	-	6.775	6.922	7.065	7.217	7.367	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds the "shared" resources that support the technical and management (i.e. headquarters, resource management, acquisition, human resources, and operations) aspects of the Army's Integrated Evaluations, System of Systems Engineering and Analysis efforts, coordination of Capability Set (CS) Fieldings, and the Army Rapid Capabilities Office (RCO). Effectively utilizing "shared" resources reduces overall cost to the program. The personnel funded by this project provide staff functions for the Brigade Analysis, Integration and Evaluation program missions and the RCO.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Program Management and Integration	7.304	5.138	6.062
Description: This effort funds for all "shared" resources that supports the Brigade Analysis, Integration and Evaluation program and the Army Rapid Capabilities Office (RCO).			
FY 2016 Accomplishments: Program, information, security, business, and personnel management effort required to support the ASA(ALT) System of System Engineering and Integration (SoSE&I) Directorate. This includes; support of the system of system engineering process, the ASS(ALT) integrated master schedule development and implementation, support of the Lab Based Risk Reduction and network integration effort, support of the NIE/AWA, and support of synchronized fielding. It included the following types of activities: Program management, contracting, financial management, cost analysis, personnel management, operations, security management, information management, facilities/infrastructure management, Pentagon liaison, and knowledge management.			
FY 2017 Plans: This effort includes program, information, security, business, and personnel management efforts required to support the ASA(ALT) System of System Engineering and Integration (SoSE&I)Directorate. This includes; support of the system of system engineering process, the ASSALT integrated master schedule development and implementation, support of the Lab Based Risk Reduction and network integration effort, in support of closing-out AWA 17.1, planning, conducting/executing and closing-out NIE17.2, planning and conducting/executing AWA18.1 and planning for NIE18.2, along with closing out Capability Set Synchronized Fielding (CS) CS16, conducting CS17 and planning for CS18, it also includes support to Common Operating Environment (COE), Cyber Focal along with Positioning Navigation and Timing (PNT). It includes the following types of activities: Program			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DZ6 / *Army Integration Management & Coordination*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
management, contracting, financial management, cost analysis, personnel management, operations, security management, information management, facilities and infrastructure management, Pentagon liaison, knowledge management. ***FY 2018 Plans:*** This effort includes program, business, operations, and personnel management support. It includes the following types of activities: Program management, contracting, financial management, cost analysis, personnel management, operations, security management, information management, facilities and infrastructure management, Pentagon liaison, and knowledge management. It also includes program oversight for Program Manager, Position, Navigation, and Timing (PNT).			
Title: Facilities and IT Support ***Description:*** Provides funding for infrastructure/facilities and IT support. ***FY 2016 Accomplishments:*** Provided funding for infrastructure / facilities, and government personnel IT support from Network connectivity to purchasing/ leasing hardware, software, computers, communications equipment and services. ***FY 2017 Plans:*** Provides funding for infrastructure / facilities, and government personnel IT support from Network connectivity to purchasing/ leasing hardware, software, computers, communications equipment and services. ***FY 2018 Plans:*** Provides funding for infrastructure / facilities, and IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services.	1.062	0.608	0.713
Accomplishments/Planned Programs Subtotals	8.366	5.746	6.775

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• DY3: *NIE Test & Evaluation*	10.768	65.844	58.395	-	58.395	61.482	49.699	45.735	50.051	Continuing	Continuing
• DY4: *Network Integration Support*	13.700	-	-	-	-	-	-	-	-	0.000	13.700
• DY5: *Production/Field Coordination for Capability Sets*	3.486	3.960	4.261	-	4.261	4.349	4.434	4.524	4.502	Continuing	Continuing
• DY6: *Brigade and Platform Integration Support*	44.164	-	-	-	-	-	-	-	-	0.000	44.164

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DZ6 / *Army Integration Management & Coordination*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• DY7: *Army Systems Engineering, Architecture & Analysis*	15.802	14.166	15.508	-	15.508	15.998	25.121	25.499	26.214	Continuing	Continuing
• FG7: *Emerging Technology Initiatives*	-	56.939	60.421	-	60.421	39.991	39.985	35.995	41.020	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project includes the purchase of IT hardware, software and service support; general office and operational supplies.

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / *Brigade Analysis, Integration and Evaluation*	Project (Number/Name) FG7 / *Emerging Technology Initiatives*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
FG7: *Emerging Technology Initiatives*	-	0.000	56.939	60.421	-	60.421	39.991	39.985	35.995	41.020	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Equipment mix and configuration may change based on changes in operational environment and circumstances.

*Project FG7 Emerging Technology Initiatives was created in support of the Army Rapid Capabilities Office (RCO). This project will be realigned to PE 0605054A Emerging Technologies Initiatives in FY 2019 for greater transparency of the Army RCO efforts.

A. Mission Description and Budget Item Justification

This Project funds the prototyping and demonstration of selected technology enabled capabilities to support advanced Soldier, ground, aviation, and Command, Control, Communications, Computers Intelligence & Reconnaissance (C4ISR) systems and equipment.
The Primary goal is to take technologies to Technology Readiness Level (TRL) 7 and 8 through a collaborative and accelerated acquisition process. Technologies will be demonstrated in relevant environments, performing tactical/operational scenarios. Efforts will focus on high-priority, threat-based projects with the intent to deliver an operationally effective capability within one to five years. Efforts will include accelerated material development and competitive prototyping based on anticipated and emerging threats and opportunities. This Project provides the Army an improved mechanism to effectively confront emerging threats and advance America's military dominance. Efforts include development, acquisition, assessment, maturation, and transition of prototype technologies to acquisition programs in Cyber; Electronic Warfare (EW); Positioning, Navigation and Timing (PNT); Survivability and other high priority emerging threats and opportunities. Funds may also allow for acceleration of critical Program of Record capabilities to counter urgent and emerging threats. The Army Rapid Capabilities Office (RCO) assesses the provided capabilities to improve future solutions, to inform future Army capability requirements, and to potentially transition the capability to an Army acquisition program.
The Army RCO expedites the provisioning and fielding of critical combat materiel capabilities to the Warfighter to meet Combatant Commanders' needs. The Army RCO was established per Headquarters, Department of the Army, memo, SUBJECT: Establishment of the Army Rapid Capabilities Office, signed by the Secretary of the Army: Eric K. Fanning, dated 11 August 2016.
The RCO assesses Commercial-Off-The Shelf (COTS), Government Off-The- Shelf (GOTS), and Non-Developmental Item (NDI) (non-standard equipment) solutions for modification and/or integration to address changes in contested environments with enduring materiel solutions for forces deployed globally. Procure prototypes and evaluate solutions to be fielded and transition to an acquisition program for production and sustainment.

The RCO capabilities focus areas are:
Cyber
Electronic Warfare (EW)
Position, Navigation and Timing (PNT)
Survivability

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** FG7 / *Emerging Technology Initiatives*

Operational Needs Statements (ONS)
Any other operational needs that become a priority as designated by the Army Board of Directors (BOD)

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Maturation, Prototyping, Assessment, and Integration of Emerging and Essential Technologies	-	56.939	60.421

Description: This effort selects technologies that show high promise for advancing and accelerating capabilities required under acquisition programs and develops and evaluates associated prototypes for accelerated identification, assessment, and transition to an acquisition program for production and fielding. It also demonstrates integrated technologies within a high fidelity and realistic operating environment and transitions them to a formal program of record on an accelerated basis. This effort also includes analysis, integration and evaluation of emerging capabilities on air and ground platforms to reduce risk and support technology insertions.

FY 2017 Plans:
These funds will be used to identify, develop, procure, modify, and evaluate prototypes providing capability prioritized by the Board of Directors (BOD) in the areas of Cyber, EW, PNT, Survivability, and Other critical capability gaps. Funding supports infrastructure, procurement of prototypes, engineering and material for integration, field support representation, early acquisition documentation, system modification, and development and operational testing needed to transition a procurement ready solution to an acquisition program for execution.

Electronic Warfare Phase 1 Requirements (In support of USAREUR ONS – 16-21509) - will integrate and assess Ground EW capability with enhanced and networked Electronic Warfare Planning and Management Tool (EWPMT) Thick Client, Prophet, and Versatile Radio Observation & Direction Finding (VROD) / Modular Adaptive Transmitter (VMAX). In addition, the FY17 requirement will demonstrate EW modules for Integrated Sensor Architecture (ISA).

Electronic Warfare Phase 2 Requirements (In support of USAREUR ONS – 16-21509) - will initiate integration and assessment of air EW capability. Funding will acquire long lead prototypes, conduct non-recurring integration engineering and risk reduction exercises, and enable further development of ground EW prototype capabilities.

Positioning, Navigation and Timing Phase 1 Requirements (In support of USAREUR ONS – 16-21509) - will integrate and assess the DAGR Distributed Device Enhancement (D3E) w/Anti-Jam (AJ) Antenna and Global Navigation Satellite System (GNSS) Sensors to participate in the Joint Warfighting Assessment (JWA) 18.1. Non-recurring engineering and integration of the D3E/AJ onto the Bradley, Abrams, Stryker and Paladin platforms is required in FY18 to obtain a Capabilities and Limitations (C&L) report to enable Urgent Materiel Release (UMR).

FY 2018 Plans:

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** FG7 / *Emerging Technology Initiatives*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
These funds will be used to identify, develop, procure, modify, and evaluate prototypes providing capability prioritized by the Board of Directors (BOD) in the areas of Cyber, EW, PNT, Survivability, and Other critical capability gaps. Funding supports infrastructure, procurement of prototypes, engineering and material for integration, field support representation, early acquisition documentation, system modification, and development and operational testing needed to transition a procurement ready solution to an acquisition program for execution. Electronic Warfare Phase 1 Requirements (In support of USAREUR ONS – 16-21509) - will continue integration and assessment that began in FY17 for Ground EW capability with enhanced and networked for Prophet, Versatile Radio Observation & Direction Finding (VROD) / Modular Adaptive Transmitter (VMAX) and Sabre Junction. Electronic Warfare Phase 2 Requirements (In support of USAREUR ONS – 16-21509) - will continue integration and assessment that began in FY17 of air EW capability. Funding will acquire long lead prototypes, conduct non-recurring integration engineering and risk reduction exercises, and enable further development of ground EW prototype capabilities. Positioning, Navigation and Timing Phase 1 Requirements (In support of USAREUR ONS – 16-21509) - will continue integration and assessment of the DAGR Distributed Device Enhancement (D3E) w/Anti-Jam (AJ) Antenna and Global Navigation Satellite System (GNSS) Sensors to participate in the Joint Warfighting Assessment (JWA) 18.1. Non-recurring engineering and integration of the D3E/AJ onto the Bradley, Abrams, Stryker and Paladin platforms is required in FY18 to obtain a Capabilities and Limitations (C&L) report to enable Urgent Materiel Release (UMR).			
Accomplishments/Planned Programs Subtotals	-	56.939	60.421

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• DY3: *NIE Test & Evaluation*	10.768	65.844	58.395	-	58.395	61.482	49.699	45.735	50.051	Continuing	Continuing
• DY4: *Network Integration Support*	13.700	-	-	-	-	-	-	-	-	0.000	13.700
• DY5: *Production/Field Coordination for Capability Sets*	3.486	3.960	4.261	-	4.261	4.349	4.434	4.524	4.502	Continuing	Continuing
• DY6: *Brigade and Platform Integration Support*	44.164	-	-	-	-	-	-	-	-	0.000	44.164
• DY7: *Army Systems Engineering, Architecture & Analysis*	15.802	14.166	15.508	-	15.508	15.998	25.121	25.499	26.214	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** FG7 / *Emerging Technology Initiatives*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• DZ6: *Army Integration Management & Coordination*	8.366	5.746	6.775	-	6.775	6.922	7.065	7.217	7.367	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Army RCO capitalizes on current and emerging technologies to provide rapid solutions to address emerging threats and high impact capability opportunities of U.S. Army Forces deployed globally. This is accomplished in one of two ways: 1) adapting COTS/GOTS/NDI equipment to meet operational needs and 2) developing emerging deployable capability through research and development organizations, academia, and industry. The RCO uses streamlined acquisition methods, processes and techniques to rapidly acquire capability; these methods vary by project. The Rapid Capabilities Office will have a dedicated contracting staff, with the flexibility to use both traditional and non-traditional contracting approaches. To reach non-traditional vendors, RCO will use non-standard contracting methods, such as Other Transaction Authority instruments. Where practicable, prototypes will be acquired using competitive procedures. Projects will be transitioned to an approved acquisition program for production and sustainment. Operational assessments will be conducted to provide feedback in support of Army requirements generation, prototype maturation, and future capability development.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EW Program Management	Various	PM Electronic Warfare & Cyber : APG, MD	0.000	-		-		1.618	Jan 2018	-		1.618	0.000	1.618	0.000
PNT Program Management	Various	PM PNT : Various	0.000	-		-		1.279	Oct 2017	-		1.279	0.000	1.279	0.000
		Subtotal	0.000	-		-		2.897		-		2.897	0.000	2.897	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Maturation, Prototyping, Assessment, and Integration of Emerging and Essential Technologies	C/TBD	TBD : TBD	0.000	-		56.939	Mar 2017	30.010		-		30.010	Continuing	Continuing	Continuing
EW VROD/VMAX Software Development	MIPR	I2WD : APG, MD	0.000	-		-		1.197	Jan 2018	-		1.197	0.000	1.197	0.000
EW Air Risk Reduction	C/CPFF	General Atomics : Multiple	0.000	-		-		7.760	Jan 2018	-		7.760	0.000	7.760	0.000
EW TORO Development	MIPR	Air Force : TBD	0.000	-		-		5.300	Dec 2017	-		5.300	0.000	5.300	0.000
EW Sabre Fury Development	C/CPFF	SRC : Syracuse, NY	0.000	-		-		2.088	Dec 2017	-		2.088	0.000	2.088	0.000
EW ISA Software Development	C/CPFF	MTEQ : APG, MD	0.000	-		-		0.914	Jan 2018	-		0.914	0.000	0.914	0.000
EW EWPMT Development	C/CPFF	Raytheon : Ft. Wayne, IN	0.000	-		-		1.977	Jan 2018	-		1.977	0.000	1.977	0.000
PNT D3E Integration	C/CPFF	GPS Source : Pueblo, CO	0.000	-		-		0.752	Jan 2018	-		0.752	0.000	0.752	0.000
		Subtotal	0.000	-		56.939		49.998		-		49.998	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EW VROD/VMAX Information Assurance	MIPR	I2WD : APG, MD	0.000	-		-		0.522	Jan 2017	-		0.522	0.000	0.522	0.000
EW Prophet Safety Support	MIPR	CECOM : APG, MD	0.000	-		-		0.075	Dec 2017	-		0.075	0.000	0.075	0.000
PNT Engineering Support	C/CPFF	CERDEC : APG, MD	0.000	-		-		1.178	Oct 2017	-		1.178	0.000	1.178	0.000
		Subtotal	0.000	-		-		1.775		-		1.775	0.000	1.775	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EW Sabre Fury Software Test and Information Assurance	MIPR	TBD : TBD	0.000	-		-		0.950	Dec 2017	-		0.950	0.000	0.950	0.000
EW RIM Test Articles	C/IDIQ	Army Research Laboratory : APG, MD	0.000	-		-		2.450	Jan 2018	-		2.450	0.000	2.450	0.000
EW EWPMT Test	C/CPFF	Raytheon : Ft. Wayne, IN	0.000	-		-		0.727	Jan 2018	-		0.727	0.000	0.727	0.000
PNT Customer Test	MIPR	ATEC WSMR : WSMR, NM	0.000	-		-		0.897	Nov 2017	-		0.897	0.000	0.897	0.000
PNT Pseudolite test	MIPR	ATEC WSMR : WSMR, NM	0.000	-		-		0.217	Nov 2017	-		0.217	0.000	0.217	0.000
PNT JWA 18.1	MIPR	ATEC : OCONUS	0.000	-		-		0.510	Nov 2017	-		0.510	0.000	0.510	0.000
		Subtotal	0.000	-		-		5.751		-		5.751	0.000	5.751	0.000

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		56.939		60.421		-		60.421	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** FG7 / *Emerging Technology Initiatives*

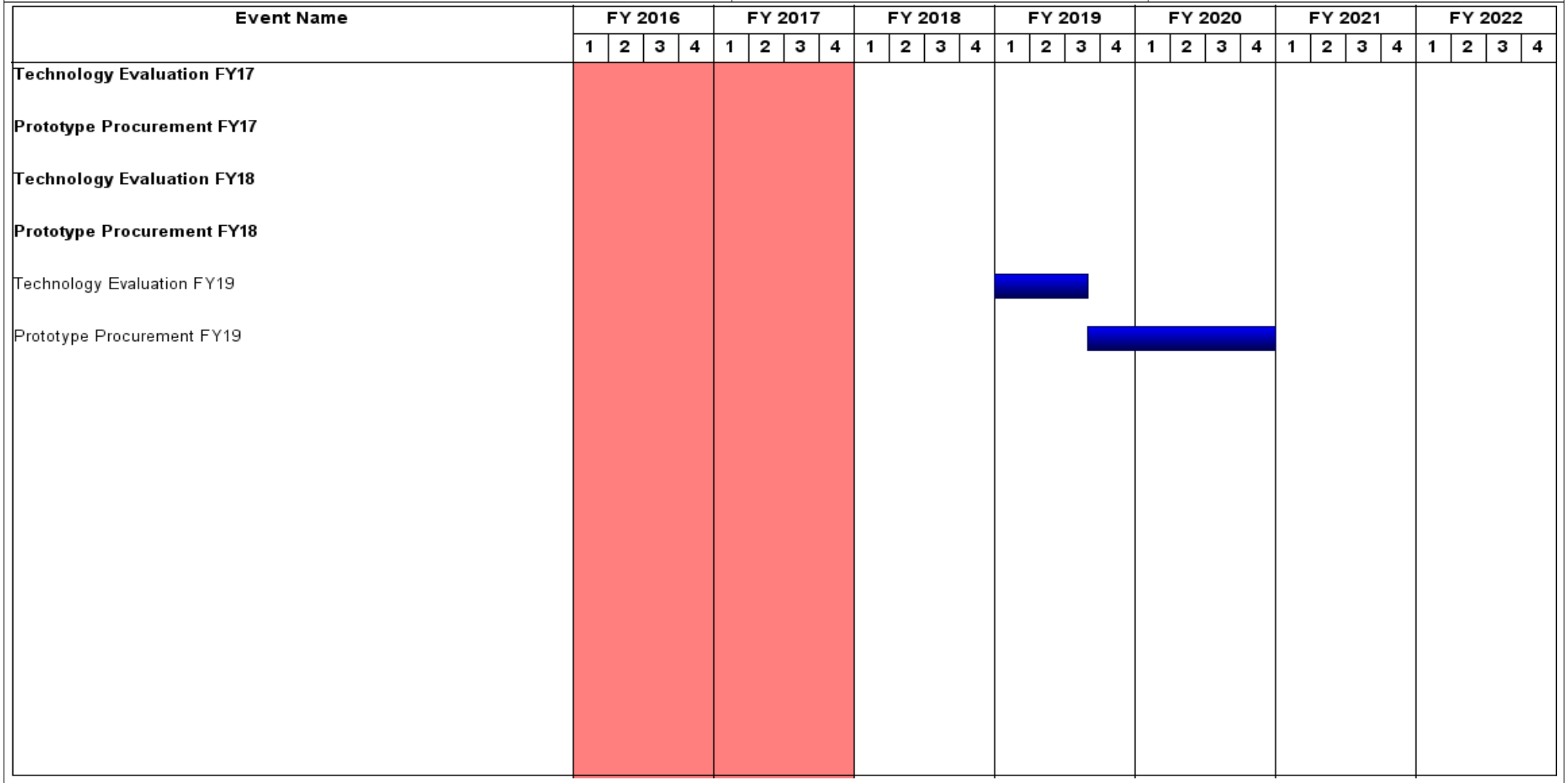

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** FG7 / *Emerging Technology Initiatives*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Technology Evaluation FY17	2	2017	3	2018
Prototype Procurement FY17	3	2017	4	2017
Technology Evaluation FY18	1	2018	3	2018
Prototype Procurement FY18	3	2018	4	2018
Technology Evaluation FY19	1	2019	3	2019
Prototype Procurement FY19	3	2019	4	2020