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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army										Date: March 2019		
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	139.386	49.250	42.634	-	42.634	42.990	43.288	42.786	42.436	0.000	402.770
DY3: NIE Test & Evaluation	-	49.220	22.660	16.851	-	16.851	17.326	17.356	16.522	16.851	0.000	156.786
DY5: Production/Field Coordination for Capability Sets	-	4.161	4.239	2.157	-	2.157	2.224	2.213	2.185	2.304	0.000	19.483
DY7: Army Systems Engineering, Architecture & Analysis	-	19.683	15.600	17.807	-	17.807	17.534	17.659	17.870	17.043	0.000	123.196
DZ6: Army Integration Management & Coordination	-	8.315	6.751	5.819	-	5.819	5.906	6.060	6.209	6.238	0.000	45.298
FG7: Emerging Technology Initiatives	-	58.007	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	58.007
Note Project FG7 Emerging Technology Initiatives was created in support of the Army Rapid Capabilities Office (RCO). This project was realigned to PE 0605054A (PROJECT FI3) Emerging Technologies Initiatives in FY 2019 for greater transparency of the Army RCO efforts. System of Systems Engineering and Integration (SoSE&I) Directorate will be changing names to the Office of the Chief Systems Engineer in FY19. Network Integration Exercise (NIE) activity will be referred to as Enduring Assessments starting in FY20 (to include events like the Joint Warfighter Assessments (JWAs)). A. Mission Description and Budget Item Justification This program element is comprised of five projects: Enduring Assessments (Joint Warfighter Assessment (JWA); 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 (MCN) 2020, the Force 2025 objectives, and emerging technology insertion. Project DY3: Enduring Assessments 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.												

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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				
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 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 funds resources that support the technical and management (i.e. headquarters, resource management, acquisition, human resources, and operations) aspects of the Army Rapid Capabilities Office (RCO).						
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget		145.360	49.288	59.097	-	59.097
Current President's Budget		139.386	49.250	42.634	-	42.634
Total Adjustments		-5.974	-0.038	-16.463	-	-16.463
• Congressional General Reductions		-0.103	-0.038			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-0.900	-			
• SBIR/STTR Transfer		-4.971	-			
• Adjustments to Budget Years		-	-	-16.463	-	-16.463
Change Summary Explanation						
FY 2020 funding change is in support of the Army's modernization priorities in support of the National Defense Strategy.						

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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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
DY3: NIE Test & Evaluation	-	49.220	22.660	16.851	-	16.851	17.326	17.356	16.522	16.851	0.000	156.786
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Project DY3: Enduring Assessments Test & Evaluation funding enables the Assistant Secretary of the Army (Acquisition Logistics and Technology) to support Army Futures Command concept and capability assessments with materiel system support and integration for Warfighter Assessments. This effort synchronizes, integrates, and manages system and System of Systems (SoS) capability assessments in laboratory and operational environments in order to inform Army force modernization decisions that impact system requirements, interoperability compliance, operational readiness, and exploitable technology opportunities aligned with Army modernization priorities.												
Mission Engineering Assessments Directorate (MEAD), acting as lead agency for Assistant Secretary of the Army (Acquisition, Logistics and Technology) (ASA (ALT)), Office of Chief Systems Engineer (OCSE), leads and coordinates ASA (ALT)'s participation in Warfighter Assessment events to enable informal and formal evaluation of new material solutions and concepts within an integrated multi-domain environment. With support from appropriate Program Offices, provides the design, engineering, systems integration, program management functions and expertise required to integrate networked and stand-alone systems into the event architecture; and conduct technical system of system architecture assessments.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2018	FY 2019	FY 2020	
Title: Integrated Evaluations									46.759	20.822	16.144	
Description: These funds enable assessments of capabilities in laboratory and operational environments across the Army battlespace to assess the systems, SoS, and inform system development and fielding decisions. These funds support event planning, preparation, execution, and close-out.												
FY 2019 Plans: Overview: DY3 JWA These funds provide for Close out of NIE 18.2; Planning, Preparation, Execution, and Close-out for JWA 19; and initial planning for JWA 20. Planning and Preparation are expected to occur at Ft Bliss, TX, while, Execution and Close-out are expected to occur at various locations such as the unit?s home station or a Combined Arms Training Center.												
Planning: These funds support the development and implementation of horse blanket architecture, conducting design activities for integration of capability onto unit vehicles, exercise planning and coordination, to include:												

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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019
<p>Developing a Validation Exercise (VALEX) plan that configures and checks out the system of systems prior to the exercise; 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 capabilities.</p> <p>These funds also support defining the network system configurations and routing schemes for each event.</p> <p>Preparation:</p> <p>These funds support efforts leading up to the execution of the assessment exercise, to include LBRR, vehicle integration design and build, safety release, and conducting of VALEX.</p> <p>The LBRR risk reduction efforts are conducted in controlled laboratory environments to identify and resolve integration, configuration and interoperability issues prior to assessments. Reports delivered by the LBRR document the results of network functional testing, routing, and thread testing.</p> <p>These funds provide for integration efforts such as design of installation kits on tactical platforms; fabrication of specialized cables, metal plates, racks, and brackets to enable platform installation/integration; and safety release testing. The scope of the integration effort also includes planning for Field Service Representatives (FSRs) and other technical support personnel, coordination and movement of the Fleet vehicles, and inventory management of systems.</p> <p>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.</p> <p>-LOADEX; Support unit installation of new network capabilities into existing network, to include setting Internet Protocol (IP) addresses and configure network systems changes; modify radio mission plans, system configuration files and system parameters; and perform test/fix/test processes at the system and component levels.</p> <p>-ESTABLISH; Verification of new 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.</p> <p>-INTEGRATE; Verification of networked related hardware/software performance and networked communications at each echelon. Troubleshoot issues found with new capabilities and ensure tactical unit information exchange will enable units to support their intended missions.</p> <p>-VALIDATE; Support unit conduct of mission threads to verify the correct routing of messages and information transfer among critical nodes in the network.</p> <p>Execution:</p> <p>Funding supports all management and synchronization of field operations and support personnel during the events, and coordination with the supported command. It also includes monitoring of network operations in the field, trouble ticket management, continued LBRR support to troubleshoot technical issues, deployment of mobile facilities, and replacement parts/ components required to effectively support concepts and capabilities under assessment.</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>Closeout: These funds support all activities associated with the de-installation and recovery of 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. Conduct AARs for process improvements.</p> <p>Future Planning: These funds support efforts to provide technical input on candidate systems at the Concepts and Capabilities Review Board and Strategic Planning Reviews for future events.</p> <p>FY 2020 Plans: JWA 20; and initial planning for JWA 21: These funds provide for execution, close-out and assessment for JWA 20; and initial planning for JWA 21. Execution of JWA 20 is expected at Grafenwoehr, Germany with JWA 21 planning expected to occur at Ft Bliss, TX and to be determined location supporting Pacific area. As the Army Future Command matures, Mission Engineering and Assessment Directorate also expects to support planning, preparation, execution, close-out, and assessment of other exercises within the JMC portfolio.</p> <p>Planning: These funds support the development and implementation of horse blanket architecture; conducting design activities for integration of capability onto unit platforms; development, engineering, and documentation of network; and exercise planning and coordination, to include: developing a Validation Exercise (VALEX) plan that configures and checks out the system of systems prior to the exercise; 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 capabilities.</p> <p>These funds also support defining the network system configurations and routing schemes for each event.</p> <p>These funds support efforts to provide technical input on candidate systems at the Concepts and Capabilities Review Board and Strategic Planning Reviews for future events.</p> <p>Preparation: These funds support efforts leading up to the execution of the assessment exercise, to include lab based risk reduction (LBRR), platform integration design and build, safety release, and conducting of VALEX. The LBRR risk reduction efforts are conducted in controlled laboratory environments to identify and resolve integration, configuration and interoperability issues prior to assessments. Reports delivered by the LBRR document the results of network functional testing, routing, and thread testing.</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>These funds provide for integration efforts such as design of installation kits on tactical platforms; fabrication of specialized cables, metal plates, racks, and brackets to enable platform installation/integration; and safety release testing. The scope of the integration effort also includes planning for Field Service Representatives (FSRs) and other technical support personnel, coordination and movement of the Fleet vehicles, and inventory management of systems.</p> <p>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:</p> <ul style="list-style-type: none"> - LOADEX; Support unit installation of new network capabilities into existing network, to include setting Internet Protocol (IP) addresses and configure network systems changes; modify radio mission plans, system configuration files and system parameters; and perform test/fix/test processes at the system and component levels. - ESTABLISH; Verification of new 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 related hardware/software performance and networked communications at each echelon. Troubleshoot issues found with new capabilities and ensure tactical unit information exchange will enable units to support their intended missions. - VALIDATE; Support unit conduct of mission threads to verify the correct routing of messages and information transfer among critical nodes in the network. <p>Execution:</p> <p>Funding supports all management and synchronization of field operations and support personnel during the events and coordination with the supported command. It also includes monitoring of network operations in the field, trouble ticket management, continued LBRR support to troubleshoot technical issues, deployment of mobile facilities, and replacement parts/ components required to effectively support concepts and capabilities under assessment.</p> <p>Closeout:</p> <p>These funds support all activities associated with the de-installation and recovery of 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. Conduct AARs for process improvements.</p> <p>Assessment: These funds support activities associated with providing documentation and technical assessment of the system of systems architecture to include interfaces between systems, compare and contrast between architecture characteristics, and compliance with published network standards.</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019
<p>In FY2020 the Joint Warfighter Assessment (JWA), a key component of the Army's Force 2025 Maneuvers, will occur in Europe in support of US Army Europe and US European Command. The JWA is used to assess interim solutions to Army Warfighting Challenges. The JWA concept maximizes collective resources to advance joint and multinational interoperability, future force development, and unit training readiness priorities. Concepts and capabilities are embedded in a live, virtual, and constructive Multinational Division (MND) exercise that is representative of current and future operational environments. The JWA provides a unique opportunity to increase innovation, improve interoperability, and enhance unit readiness. JWA offers the triple pay-off with future force development, training readiness, and Joint / Multinational interoperability assessment opportunities. These funds support the following major efforts associated with an assessment:</p> <ul style="list-style-type: none"> - Planning: Coordination with multiple stakeholders on the participation and resourcing of personnel, services, equipment and prototypes, and other deliverables needed for risk reduction events, capability and platform integration, training, field support and logistics, event battle rhythm/schedule, and developing network data products. - Preparation: Conduct risk reduction, complete system integrated designs and builds, build prototype vehicles for safety release, conduct system installation and checkout, validate the network, and obtain Information Assurance certifications. A key preparation task is the full scale live network validation event, which includes Cyber Vulnerability and Penetration Assessment of the network. This ensures the technical architecture and security procedures are place to support an exercise of this scale and complexity. Additionally, preparation efforts will supports new system user training. - Execution: Technical and logistics support during soldier-led assessments, trouble ticket management and closeout, and field support management. - Close-out: Inventorying platforms/systems, de-installing equipment, returning platforms to their original configurations. All unit equipment will be returned to original configuration following the exercise to ensure unit is fully prepared to execute wartime mission. The final close out task is conduct of After Action Review (AAR) and capture of lessons learned both for systems and architecture, as well as process and procedures for support exercises. <p>These funds may also be used for procuring limited equipment and materials (to include prototypes, when required), event infrastructure, field services, personnel support (government and contractor), and travel. These funds may also support similar activities for smaller assessment events leading up to the Joint Warfighter Assessment. Additionally, these funds will support initial planning for the Joint Warfighter 21, scheduled to support US Pacific Command and US Army Pacific. Planning events may occur at home station or require travel to support unit locations. Planning activities will include things such as concept and capability solicitation, initial architecture considerations, and logistics planning.</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement: Decrease in funding due to requirements to support Army's modernization priorities.</p>			
Title: Infrastructure and other support		2.461	1.135
			0.707

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B. Accomplishments/Planned Programs (\$ in Millions)									FY 2018	FY 2019	FY 2020
Description: Provides for setup, utilities, furniture, equipment and maintenance (of all equipment and facilities) used by SoSE&I (CPD) in support of Joint Warfighting Assessments (JWA). FY 2019 Plans: Provides for setup, utilities, furniture, equipment and maintenance (of all equipment and facilities) used by SoSE&I Capability Package Directorate (CPD) in support of assessments. It includes lease and support maintenance contracts for IT equipment/ support and facilities. FY 2020 Plans: Overview: These funds provide packing, shipping, and setup for setup of operations at locations outside of Fort Bliss TX in support of JWA or other required exercises. It also provides for utilities, furniture, equipment and maintenance of equipment and facilities used by Mission Engineering and Assessment Directorate while at Fort Bliss in support of exercise planning, preparation, closeout, and events at Fort Bliss. It includes lease and support maintenance contracts for IT equipment/ support and facilities. FY 2019 to FY 2020 Increase/Decrease Statement: Decrease in funding due to requirements to support Army's modernization priorities.											
Title: FY 2019 SBIR / STTR Transfer FY 2019 Plans: FY 2019 SBIR / STTR Transfer FY 2019 to FY 2020 Increase/Decrease Statement: FY 2019 SBIR / STTR Transfer									-	0.703	-
Accomplishments/Planned Programs Subtotals									49.220	22.660	16.851
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• DY5: <i>Production/Field Coordination for Capability Sets</i>	4.161	4.239	2.157	-	2.157	2.224	2.213	2.185	2.304	Continuing	Continuing
• DY7: <i>Army Systems Engineering, Architecture & Analysis</i>	19.683	15.600	17.807	-	17.807	17.534	17.659	17.870	17.043	Continuing	Continuing
• DZ6: <i>Army Integration Management & Coordination</i>	8.315	6.751	5.819	-	5.819	5.906	6.060	6.209	6.238	Continuing	Continuing

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C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u> <u>Base</u>	<u>FY 2020</u> <u>OCO</u>	<u>FY 2020</u> <u>Total</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• FG7: <i>Emerging Technology Initiatives</i>	58.007	-	0.000	-	0.000	-	-	-	-	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
This project includes competitive contracts for test support services.											
This project does not have any requirement for direct procurement of hardware or software.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
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					
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Core Government Labor	Allot	SoSE&I : Various	-	4.056	Nov 2017	4.578	Nov 2018	3.205	Nov 2019	-		3.205	Continuing	Continuing	-
Matrix Government Labor	MIPR	SoSE&I : Various	-	3.131	Nov 2017	1.665	Nov 2018	1.247	Nov 2019	-		1.247	Continuing	Continuing	-
MITRE Labor	FFRDC	MITRE : Various	-	1.820	Nov 2017	0.910	Nov 2018	0.682	Nov 2019	-		0.682	Continuing	Continuing	-
Contractor SETA Labor	C/CPFF	TBD : Various	-	4.020	Nov 2017	2.467	Nov 2018	2.223	Nov 2019	-		2.223	Continuing	Continuing	-
Temporary Duty (TDY)	Allot	SoSE&I : Various	-	1.000	Nov 2017	0.827	Nov 2018	0.639	Nov 2018	-		0.639	Continuing	Continuing	-
Subtotal			-	14.027		10.447		7.996		-		7.996	Continuing	Continuing	N/A
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)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Evaluations	Various	Various : TBD	39.000	-		-		-		-		-	0.000	39.000	-
FY 2019 SBIR / STTR Transfer	TBD	Various : None	-	-		0.703		-		-		-	0.000	0.703	-
Subtotal			39.000	-		0.703		-		-		-	0.000	39.703	N/A
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)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Vehicle Integration	C/CPFF	BRTRC : Various	-	7.825	Nov 2017	4.500	Mar 2019	4.645	Mar 2019	-		4.645	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network Integration and Baseline Systems	MIPR	PEO C3T : Various	-	7.000	Nov 2017	3.400	Mar 2019	2.119	Mar 2019	-		2.119	Continuing	Continuing	Continuing
Infrastructure and other support	TBD	TBD : Various	2.885	5.000	Nov 2017	1.135	Mar 2019	0.706	Mar 2019	-		0.706	Continuing	Continuing	Continuing
Subtotal			2.885	19.825		9.035		7.470		-		7.470	Continuing	Continuing	N/A
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)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ATEC Test and Evaluation Support	MIPR	ATEC : Various	18.117	3.500	Nov 2017	0.700	Mar 2019	0.733	Mar 2019	-		0.733	Continuing	Continuing	Continuing
Lab Based Risk Reduction (LBRR)	MIPR	CERDEC : APG, MD	-	5.300	Nov 2017	1.500	Mar 2019	0.407	Mar 2019	-		0.407	Continuing	Continuing	Continuing
Satellite Region Hub Node (RHN) Technical Support	MIPR	Cyber Battle Lab : Ft. Gordon, GA	-	2.139	Nov 2017	-		-		-		-	Continuing	Continuing	Continuing
Satellite Transponder Bandwidth	MIPR	DISA : Various	-	2.500	Nov 2017	-		-		-		-	Continuing	Continuing	Continuing
Cyber Vulnerability/Risk Assessments	MIPR	Army Research Laboratory : Various	-	0.700	Nov 2017	0.275	Mar 2019	0.245	Mar 2019	-		0.245	Continuing	Continuing	Continuing
Systems Under Evaluation (SUEs)	C/Various	TBD : Various	-	1.229	Nov 2017	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			18.117	15.368		2.475		1.385		-		1.385	Continuing	Continuing	N/A
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.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>					Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>				

Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
- Program 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 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			60.002	49.220		22.660		16.851		-		16.851	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army																Date: March 2019																
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>										Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>												
Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JWA 20 Planning - Execution																																
JWA 20 DP 1																																
JWA 20 DP 2a																																
JWA 20 DP 2b																																
JWA 20 Lab Integration/Testing																																
JWA 20 Candidate Solution Integration																																
JWA 20 ValEx																																
JWA 20 Garrison CommEx																																
JWA 20 Field CommEx																																
JWA 20 Event																																
JWA 20 Event Analysis & Summary																																
JWA 21 Planning - Execution																																
JWA 21 DP 1																																

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>	

Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JWA 21 DP 2a								5																				
JWA 21 DP 2b												7																
JWA 21 Lab Integration/Testing																												
JWA 21 Candidate Solution Integration																												
JWA 21 ValEx																												
JWA 21 Garrison CommEx																												
JWA 21 Field CommEx																												
JWA 21 Event																												
JWA 21 Event Analysis & Summary																												
JWA 22 Planning - Execution																												
JWA 22 DP 1												6																
JWA 22 DP 2a													8															
JWA 22 DP 2b																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army

Date: March 2019

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

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JWA 20 Planning - Execution	3	2018	4	2020
JWA 20 DP 1	3	2018	3	2018
JWA 20 DP 2a	4	2018	4	2018
JWA 20 DP 2b	4	2019	4	2019
JWA 20 Lab Integration/Testing	1	2020	3	2020
JWA 20 Candidate Solution Integration	2	2020	2	2020
JWA 20 ValEx	2	2020	3	2020
JWA 20 Garrison CommEx	3	2020	3	2020
JWA 20 Field CommEx	3	2020	3	2020
JWA 20 Event	3	2020	3	2020
JWA 20 Event Analysis & Summary	3	2020	4	2020
JWA 21 Planning - Execution	2	2019	4	2021
JWA 21 DP 1	2	2019	2	2019
JWA 21 DP 2a	4	2019	4	2019
JWA 21 DP 2b	4	2020	4	2020
JWA 21 Lab Integration/Testing	1	2021	3	2021
JWA 21 Candidate Solution Integration	2	2021	2	2021
JWA 21 ValEx	2	2021	3	2021
JWA 21 Garrison CommEx	3	2021	3	2021
JWA 21 Field CommEx	3	2021	3	2021
JWA 21 Event	3	2021	3	2021
JWA 21 Event Analysis & Summary	3	2021	4	2021

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army	Date: March 2019
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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
JWA 22 Planning - Execution	2	2020	4	2022
JWA 22 DP 1	2	2020	2	2020
JWA 22 DP 2a	4	2020	4	2020
JWA 22 DP 2b	3	2021	3	2021
JWA 22 Lab Integration/Testing	1	2022	3	2022
JWA 22 Candidate Solution Integration	2	2022	2	2022
JWA 22 ValEx	2	2022	3	2022
JWA 22 Garrison CommEx	3	2022	3	2022
JWA 22 Field CommEx	3	2022	3	2022
JWA 22 Event	3	2022	3	2022
JWA 22 Event Analysis & Summary	3	2022	4	2022

Note

- With the loss of a dedicated unit (2/1 Armored Division) after AWA 17.1, NIE/JWA 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.
- NIEs eliminated after NIE 18.2

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
DY5: Production/Field Coordination for Capability Sets	-	4.161	4.239	2.157	-	2.157	2.224	2.213	2.185	2.304	0.000	19.483
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 2018	FY 2019	FY 2020
Title: Production/Fielding Coordination for Capability Sets (CS)	4.161	4.140	2.157
Description: 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)			

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>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.</p> <p>This project does not fund the actual production, integration, nor fielding costs associated with the CS.</p> <p>FY 2019 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 CS18 closeout, CS19 execution, and detail plan for CS20 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.</p> <p>- Production/Fielding Coordination for CS18 Products and Services: Complete training and fielding of CS 18 units. Final close out of Materiel Fielding documentation and After Action Reports (AARs) for this includes synchronization, integration, and coordination of CS Fielding for the following CS18 Units (two (2) total): field upgrade to LTI for one (1) Total Army Analysis (TAA) IBCTs and one (1) TAA IBCT plus an LTI. Coordinate and execute the PM Mission Network (WIN-T Inc 2) TCN Lite fielding and the cascading/disposition of the TCN Heavy variants and two (2) BCT NCR SNE reduction efforts.</p> <p>- Production/Fielding Coordination for CS19 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 Joint Light Tactical Vehicle (JLTV), 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 CS19 Units (two (2) total): one (1) IBCT (OCONUS) and one (1) TAA IBCT with LTI (OCONUS). Synchronize the schedule for the execution of five Brigade Combat Team NCR SNE Reduction efforts and five Brigade Combat Team TCN Lite fieldings and corresponding TCN Heavy cascade/disposition. Coordinate the integrated designs by platform, role, echelon, and BCT for CS19 including LTI. Finalize CS19 fielding requirements. Develop and manage the Integrated Master Schedule (IMS) for CS19. Coordinate A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>system and platform Program Executive Offices (PEOs) and Program Managers (PMs) for CS19. Coordinate the delivery of prototype and production builds for CS19. Support Configuration Management (CM) of platform configuration implementations, designs, A-Kits, and B-Kits. Support fielding integration of Program of Record (PoR) assets in accordance with the defined BCT network 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 CS19 gaining units.</p> <p>- Production/Fielding Coordination for CS20 Products and Services: Conduct planning, synchronization and coordination of CS Fielding for the following CS20 Units (two (2) total): two (2) TAA IBCT with LTI. Coordinate for the execution of FY20 TCN Lite fielding and the cascading/disposition of the TCN Heavy variants. Execute a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS20 to all gaining units. Begin CS20 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.</p> <p>- Engineering and Integration coordination/planning efforts to develop and maintain CS unit-specific Network Basis of Issue (NBOI) architecture and Integrated Master Schedule (IMS): Developed and maintained unit-specific NBOI and IMS for the Army's Capability Set ? Synchronized Fielding (CSSF) efforts. Prepared ?as-built? NBOI and final IMS for units fielded during FY18, maintained unit-specific NBOI and IMS for units designated to undergo CS integration in FY19-20, and developed initial (draft-level) NBOI and IMS for planned units in FY21 thru FY23. Organized, prepared, and conducted incremental technical reviews to examine and assess key/crucial planning activities and associated data product development supporting CS integration at specific fielded locations. Collected and analyzed sub-schedule performance against the baseline IMS to identify schedule risks for the Army's CSSF efforts. Validated that established incremental integration points were achievable and, if not, identified the risk to schedule. Analyzed schedule and cost performance against schedule established baselines, identified variances and their causes, and identified risks and/or impacts to critical path. Performed ?what if? schedule and cost analyses of alternative program courses of action to determine impact on schedule critical path and mission requirements. Updated and posted schedules on SharePoint for visibility and increased collaboration across the entire CS community to include ASA (ALT). Led or participated in other key technical reviews to include: After Action Reviews, Lessons Learned, Synchronized Fielding Technical Exchange Meetings (TEMs) and mini-TEMs. Provided reports and briefings to key CS stakeholders to support mutual programmatic goals and objectives and to help resolve issues and concerns affecting the CS community at-large. Identified key program risks as well as specific risk mitigation plans. Coordinated,</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019
<p>prepared, and published a synchronized New Equipment Training / New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for CS fielding to all gaining units.</p> <p>FY 2020 Plans:</p> <p>These funds provide for the following:</p> <ul style="list-style-type: none"> - Production/Fielding Coordination for Network Modernization CS: Development, coordination, and execution management of the CS Fielding plan needed to produce, integrate, and field tested Brigade improvements to the BCTs. Synchronize the integration and coordinate CS Fielding including CS19 closeout, CS20 execution, and detail plan for CS21 along with high level planning for CS21/22. 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 CS19 Products and Services: Complete training, integration and fielding of CS 19 units. Final close out of Materiel Fielding documentation and After Action Reports (AARs) for this includes synchronization, integration, and coordination of CS Fielding for the following CS19 Units (three (3) total): field network modernization (WIN-T Inc 2, Mission Command Systems) to three OCONUS IBCTs. Coordinate and execute the PM Mission Network (WIN-T Inc 2) TCN Lite fielding and the cascading/disposition of the TCN Heavy variants and multiple BCT NCR reduction efforts. Provide support to the fielding efforts for three (3) Security Force Assistance Brigades (SFABs). - Production/Fielding Coordination for CS20 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 Stryker, 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 CS20 Units (two (2) total): two (2) SBCT (OCONUS) and modernizing and conducting NCR reduction on one (1) SBCT. Synchronize the schedule for the execution of up to five Brigade Combat Team NCR SNE Reduction efforts and six Brigade Combat Team TCN Lite fieldings and corresponding TCN Heavy cascade/disposition. Coordinate the integrated designs by platform, role, echelon, and BCT for CS20 including LTI. Finalize CS20 fielding requirements. Develop and manage the Integrated Master Schedule (IMS) for CS20. Coordinate A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between system and platform Program Executive Offices (PEOs) and Program Managers (PMs) for CS20. Coordinate the delivery of prototype and production builds for CS20. Support Configuration Management (CM) of platform configuration implementations, designs, A-Kits, and B-Kits. Support fielding integration of Program of Record (PoR) assets in accordance with the defined BCT network 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 			

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019
<p>vehicle installations). Coordinate and publish a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for CS20 gaining units.</p> <p>- Production/Fielding Coordination for CS21 Products and Services: Conduct planning, synchronization and coordination of CS Fielding for the following CS21 Units (two (2) total): two (2) TAA IBCT with LTI. Coordinate for the execution of FY21 TCN Lite fielding and the cascading/disposition of the TCN Heavy variants. Execute a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS21 to all gaining units. Begin CS21 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.</p> <p>- Engineering and Integration coordination/planning efforts to develop and maintain CS unit-specific Network Basis of Issue (NBOI) architecture and Integrated Master Schedule (IMS): Developed and maintained unit-specific NBOI and IMS for the Army's Capability Set ? Synchronized Fielding (CSSF) efforts. Prepared ?as-built? NBOI and final IMS for units fielded during FY19, maintained unit-specific NBOI and IMS for units designated to undergo CS integration in FY20-21, and developed initial (draft-level) NBOI and IMS for planned units in FY21 thru FY23. Organized, prepared, and conducted incremental technical reviews to examine and assess key/crucial planning activities and associated data product development supporting CS integration at specific fielded locations. Collected and analyzed sub-schedule performance against the baseline IMS to identify schedule risks for the Army's CS SF efforts. Validated that established incremental integration points were achievable and, if not, identified the risk to schedule. Analyzed schedule and cost performance against schedule established baselines, identified variances and their causes, and identified risks and/or impacts to critical path. Performed ?what if? schedule and cost analyses of alternative program courses of action to determine impact on schedule critical path and mission requirements. Updated and posted schedules on SharePoint for visibility and increased collaboration across the entire CS community to include ASA (ALT). Led or participated in other key technical reviews to include: After Action Reviews, Lessons Learned, Synchronized Fielding Technical Exchange Meetings (TEMs) and mini-TEMs. Provided reports and briefings to key CS stakeholders to support mutual programmatic goals and objectives and to help resolve issues and concerns affecting the CS community at-large. Identified key program risks as well as specific risk mitigation plans. Coordinated, prepared, and published a synchronized New Equipment Training / New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for CS fielding to all gaining units.</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement: Decrease in funding due to requirements to support Army's modernization priorities.</p>			
Title: FY 2019 SBIR / STTR Transfer		-	0.099

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army								Date: March 2019			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2018	FY 2019	FY 2020	
FY 2019 Plans: FY 2019 SBIR / STTR Transfer											
FY 2019 to FY 2020 Increase/Decrease Statement: FY19 SBIR/STTR Transfer											
Accomplishments/Planned Programs Subtotals								4.161	4.239	2.157	
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020 Base</u>	<u>FY 2020 OCO</u>	<u>FY 2020 Total</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• DY3: <i>NIE Test & Evaluation</i>	49.220	22.660	16.851	-	16.851	17.326	17.356	16.522	16.851	Continuing	Continuing
• DY7: <i>Army Systems Engineering, Architecture & Analysis</i>	19.683	15.600	17.807	-	17.807	17.534	17.659	17.870	17.043	Continuing	Continuing
• DZ6: <i>Army Integration Management & Coordination</i>	8.315	6.751	5.819	-	5.819	5.906	6.060	6.209	6.238	Continuing	Continuing
• FG7: <i>Emerging Technology Initiatives</i>	58.007	-	0.000	-	0.000	-	-	-	-	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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
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					
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Production/Fielding Coordination for Capability Sets	TBD	Various Note: 1 : TBD	14.313	4.161	Nov 2017	4.140	Nov 2018	2.157	Nov 2019	-		2.157	Continuing	Continuing	Continuing
FY 2019 SBIR / STTR Transfer	TBD	Various : None	-	-		0.099		-		-		-	0.000	0.099	-
Subtotal			14.313	4.161		4.239		2.157		-		2.157	Continuing	Continuing	N/A
Remarks															
Note: 1 - Program Activities performed at TACOM (Warren MI) and CS units location receiving fielding. - Program Integration support through various PMs, PEOs, RDECOM.															
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Facilities and IT Support	TBD	Various Note:1 : TBD	0.694	-		-		-		-		-	0.000	0.694	-
Subtotal			0.694	-		-		-		-		-	0.000	0.694	N/A
Remarks															
Note: 1 - Program Activities performed at TACOM (Warren MI) and CS units location receiving fielding.															
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			15.007	4.161		4.239		2.157		-		2.157	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army																Date: March 2019												
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										
Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FY18 Synchronized Fielding																												
FY18 NEW Equipment Training (NET)																												
FY18 NEW Equipment Fielding (NEF)																												
FY19 Synchronized Fielding																												
FY19 Architecture Design																												
FY19 Build & Integration																												
FY19 NEW Equipment Training (NET)																												
FY19 NEW Equipment Fielding (NEF)																												
FY20 Synchronized Fielding																												
FY20 Architecture Design																												
FY20 Build & Integration																												
FY20 NEW Equipment Training (NET)																												
FY20 NEW Equipment Fielding (NEF)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>	

Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FY21 Synchronized Fielding																												
FY21 Architecture Design																												
FY21 Build & Integration																												
FY21 NEW Equipment Training (NET)																												
FY21 NEW Equipment Fielding (NEF)																												
FY22 Synchronized Fielding																												
FY22 Architecture Design																												
FY22 Build & Integration																												
FY22 NEW Equipment Training (NET)																												
FY22 NEW Equipment Fielding (NEF)																												
FY23 Synchronized Fielding																												
FY23 Architecture Design																												
FY23 Build & Integration																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army																Date: March 2019												
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										
Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FY23 NEW Equipment Training (NET)																												
FY23 NEW Equipment Fielding (NEF)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FY18 Synchronized Fielding	3	2017	2	2019
FY18 NEW Equipment Training (NET)	3	2018	2	2019
FY18 NEW Equipment Fielding (NEF)	4	2018	1	2019
FY19 Synchronized Fielding	1	2018	2	2018
FY19 Architecture Design	1	2018	3	2018
FY19 Build & Integration	2	2018	1	2020
FY19 NEW Equipment Training (NET)	2	2019	2	2020
FY19 NEW Equipment Fielding (NEF)	2	2019	4	2019
FY20 Synchronized Fielding	1	2018	2	2021
FY20 Architecture Design	1	2018	2	2019
FY20 Build & Integration	3	2018	4	2020
FY20 NEW Equipment Training (NET)	1	2020	2	2021
FY20 NEW Equipment Fielding (NEF)	1	2020	2	2021
FY21 Synchronized Fielding	1	2019	2	2022
FY21 Architecture Design	1	2019	2	2020
FY21 Build & Integration	3	2019	4	2021
FY21 NEW Equipment Training (NET)	1	2021	2	2022
FY21 NEW Equipment Fielding (NEF)	1	2021	2	2022
FY22 Synchronized Fielding	1	2020	2	2023
FY22 Architecture Design	1	2020	2	2021
FY22 Build & Integration	3	2020	4	2022
FY22 NEW Equipment Training (NET)	1	2022	2	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019	
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	
	Start		End	
Events	Quarter	Year	Quarter	Year
FY22 NEW Equipment Fielding (NEF)	1	2022	2	2023
FY23 Synchronized Fielding	1	2021	2	2024
FY23 Architecture Design	1	2021	2	2022
FY23 Build & Integration	3	2021	4	2023
FY23 NEW Equipment Training (NET)	1	2023	2	2024
FY23 NEW Equipment Fielding (NEF)	1	2023	2	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
DY7: Army Systems Engineering, Architecture & Analysis	-	19.683	15.600	17.807	-	17.807	17.534	17.659	17.870	17.043	0.000	123.196
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 and analysis, technical risk analysis, architectural products, critical path analysis, cybersecurity and interoperability risk analysis and the associated mitigation planning for the Army's materiel portfolio. This project develops process, products, and policies that ensure a solid Army Systems Engineering construct across Army Program Executive and Management Offices.

This includes efforts in support of Common Operating Environment (COE) governance, the Army Futures Command's emerging development of concepts, requirements generation, resource allocation, experimentation, acquisition, logistics, and technology components of the Army Future Force Modernization Enterprise (FFME). Focus areas includes the integration of key elements of a system into one overall system engineering construct and managing it through major system engineering activities to ensure the fielding of integrated capabilities meet the mission needs of the force against any potential adversaries. Key system engineering functions include, engineering and technical analysis, integrated System of Systems (SoS) architecture products, SoS risk analysis and mitigation planning to influence the Army's materiel portfolio. This project also includes the establishment of Army systems engineering policy and implementation standards, requirements decomposition and alignment, and resource and acquisition synchronization to address cross-portfolio issues. Key tasks are the development of integrated Architecture products; Engineering Analysis and Design; Portfolio Analysis; Systems Security Engineering process, interoperability assessments, Cybersecurity requirements analysis, compliance, and Cyber policy assessments.

The effort includes costs for labor (Government and contractor), support services, travel, training, supplies, facilities, and Information Technology (IT) support for Office of Chief Systems Engineer (OCSE). This effort funds Government labor for the Army Rapid Capabilities Office (RCO). This project also includes support to other Department of Defense (DOD) and international agencies for joint programs and collaboration efforts.

Under this Project we have five efforts: Army System of Systems Engineering and Analysis, COE, Cyber, Facilities / IT and Rapid Capabilities Office (RCO) Core Labor. The RCO core labor line is funded for RCO core labor for FY20 only. It supports the newly established FY20 RCO PROGRAM ELEMENT (PE) 0605054A PROJECT FI3 line which will fund the RCO projects.

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

	FY 2018	FY 2019	FY 2020
Title: Army System of Systems Engineering and Analysis	12.509	10.541	10.359

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019
<p>Description: Provided 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.</p> <p>FY 2019 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: - Network Basis of Issue (NBOI): detailed database and spreadsheets describing the objective, basic, and modified TOE, TRADOC required BOI system placements, network and subnet assignment data, 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 NBOI. - 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. - 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.</p> <p>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.</p> <p>Engineering Design & Analysis: These funds provide support to engineering and analysis on current critical network shortfalls to address how the Army achieve expeditionary, uninterrupted mission command; through a network comprised of intuitive, secured, standards-based capabilities adapted to commander?s requirements; and integrated into a common operating environment, with network capabilities that are assured, interoperable, tailorable, collaborative, identity-based, and accessible at the point of need in operations that include unified action partners.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>Network Modernization engineering will include the 10 modernization priorities to address critical capability shortfalls : 1) Air and Missile Defense; 2) Long-Range Fires; 3) Munitions Shortfalls; 4) Mobility, Lethality, and Protection of Brigade Combat Teams; 5) Active Protection Systems (air and ground); 6) Assured Position, Navigation, and Timing (PNT); 7) Electronic Warfare; 8) Offensive and Defensive Cyber Capabilities; 9) Assured Communications ; and 10) Vertical Lift.</p> <p>Analyze Programs of Record (PoRs) and emerging technologies to maximize Warfighter effectiveness under cost, within schedule and meeting technology readiness constraints. Perform cross-PEO System of system engineering, integration and performance analysis. Develop strategic plans for providing key technologies in support of Army critical gaps or shortfalls. 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).</p> <p>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.</p> <p>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.</p> <p>Strategic Process and Planning: 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.</p> <p>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 CS18-25 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</p>					

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Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
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.					
<p>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.</p> <p>Additional system or systems architecture support is provided to Army organizations to support fielding of modernized network equipment in parallel to CS fielding activities. These activities include architecture development supporting Special Operations Forces (SOF) dismounted radio network, Army watercraft modernization initiatives, and Army wide radio crypto-modernization related divestiture/reallocation/fielding efforts.</p> <p>IEP&E-CS: CS18</p> <p>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 (six (6) total): 2xIBCT retouch (brings CS17 BCT up to full CS18 capability) 1xANG IBCT without lower tactical internet, 1xANG IBCT Division HQ, and 1xIBCT without lower tactical internet.</p> <p>IEP&E-CS; CS19 Products and Services:</p> <p>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 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 G3/5/7, G6, G8, PEOs, PMs,</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>TCMs, 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.</p> <p>IEP&E-CS; CS20-25 Products and Services:</p> <p>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.</p> <p>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 CS20-25 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 (VICTORY) standards in Initial and CS20-25 Reference Architecture products. Begin the planning for CS20-25 Unit specific NBOI requirements and develop and coordinate the IMS with all stakeholders.</p> <p>FY 2020 Plans:</p> <p>Army Formation Reference Architecture products:</p>					

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Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>Develop and maintain all Army Combat Formations (Corps & below) System of Systems 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. Integration Exercise, Operational Test, and Army Interoperability Certification), as a reference for analysis conducted by either OCSE or other Army organizations, and for determining fielding quantities and configurations. Army formations include Corps, Infantry/Cavalry/Armored Divisions, Infantry/Stryker/Armored Brigade Combat Teams and Regiments, Combat Aviation Brigades, Field Artillery Brigades, Engineer Brigades, and other formations that may be deployed temporarily or permanently, such as the Air Defense Artillery Brigade, to support specific warfighting functions.</p> <p>Four core recurring products are:</p> <ul style="list-style-type: none"> - Basis of Issue (BOI) (Networked and Non-networked): detailed database and spreadsheets describing the objective, basic, and modified TOE, TRADOC required BOI system placements, network and subnet assignment data, 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 NBOI. - 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. - 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. <p>Document and maintain the Army?s tactical-to-enterprise end-to-end system of systems architecture. These products provide a holistic view of the entire Army network for each of the geographic combatant commands (Africa Command (AFRICOM), Central Command (CENTCOM), European Command (EUCOM), Pacific Command (PACOM), Northern Command (NORTHCOM), and Southern Command (SOUTHCOM)) and are used to support deployment decisions of enterprise resources and analysis of the comprehensive network.</p> <p>Provide subject matter expertise (SME) on the Army?s enterprise and tactical SoS architecture to all Program Executive Offices (PEO) and in support of the Army's Modernization program. SME support includes providing reference blueprints for the Army?s SoS architectures, assessment/test/deployment architecture development, and analysis planning for various Army activities ranging in scope from small training venues to full theatre events such as the Joint Warfighter Assessment.</p> <p>Engineering Design & Analysis:</p> <p>Analytic support will provide early insight into the technical health of key programs and to ensure leadership has the right data to make informed program decisions. Initial efforts will involve building the necessary MSBE infrastructure to allow end-to-end system evaluation against alternate courses of action through identification of critical interfaces and dependencies within</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019
<p>programs against which key tasks are measured. The objective is an infrastructure, analytics, data, and processes that support continuous modernization of the Army to maintain overmatch. This vision will be achieved through four thrusts.</p> <p>Develop Model Based Systems Engineering (MBSE) that follows industry-standardized practices to develop SoS designs that fulfills key warfighter requirements. Funds will be used for development of the SoS model, maintenance/operation/training of the tools used to conduct modeling, and the production of output products.</p> <p>Perform cross-PEO System of system engineering, integration and performance analysis. Develop strategic plans for providing key technologies in support of Army critical gaps or shortfalls. Conduct analyses of technical and performance requirements to support technology insertion for Warfighter capability (i.e. Intel-related operations, spectral assignment risk mitigation, and PNT (Positioning, Navigation and Timing) architecture placement).</p> <p>Strategic Planning and Schedule Synchronization: These funds provide for strategic planning to achieve Army Modernization Objectives. Provides the ability to identify and track key milestones and interdependencies related to critical capabilities within the ASA(ALT) portfolio and Army Futures Command. Conduct schedule analysis to identify integration and fielding challenges and opportunities as well as track key capability readiness to meet Chief of Staff of the Army (CSA)/Army Modernization Objectives.</p> <p>These funds provide a reliable Integrated Master Schedule (IMS) that synchronizes key cross portfolio capabilities under development within a PoR and/or a Cross Functional Team. Efforts include implementation of IMS tools, analyses of Platform schedules, and key modernization components? schedules to identify issues and opportunities. These funds also provide for limited analysis of cross-cutting capabilities within the Program Executive Office (PEO) and Cross Functional Team portfolios to identify opportunities and challenges associated with implementation and fielding.</p> <p>Requirements Analysis: These funds provide for systems engineering analysis, synchronization, and tracking of PEO and Army S&T system development progress to ensure that Army Futures Command concepts, capabilities and requirements development is accurately reflected in program of records to successfully accelerate program acquisition. Synchronization of Army threats, concepts, capability gaps and documented requirements with modernization planning will enable early feasibility assessments, support trade studies, and execution of early systems engineering to inform decisions related to feasibility, affordability and sustainability of requirements.</p> <p>These funds provide for the development of cross Army Materiel Enterprise capabilities to synchronize threats, capabilities, gaps, requirements, programs, and interdependencies and ensure that acquisition programs support Army warfighting concepts and doctrine. These funds provide strategic planning to align Army modernization with requirements development. It provides analysis of objectives, identifies potential risks and mitigation plans to ensure capability delivery.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019	
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		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
<p>Standards and Interoperability:</p> <p>This organization is charged with providing a wide range of technical coordination and oversight functions in support of the Army Modernization Strategy including, but not limited to the following primary mission areas:</p> <p>1) Early program lifecycle technical standards coordination and oversight</p> <p>2) Establish and maintain the ASA(ALT) unified standards baseline in support of all material development efforts</p> <p>3) Coordination with CIO/G-6 for analysis of requested standards waivers and tailored alignment of Title 40 interoperability certification with agile acquisition strategies</p> <p>4) provide engineering and technical support to program office level Model Based Systems Engineering (MBSE) activities to establish a "single source of truth" that traces operational capabilities to mission architecture and into actionable system level standards implementation and tailored Capability Drop (CD) requirements all the way through Test, Evaluation, and Certification</p> <p>5) Horizontal synchronization of Cross Functional Team (CFT) architecture and requirements development.</p> <p>These funds support staffing needed for effective engagement, fulfillment of staff coordination and oversight responsibilities on behalf of the Army Acquisition Executive such as Architecture and Standards Integrated Product Team (IPT) leadership, and information management of a broad range of widely used work products that support acquisition planning and execution such as the following: studies & analysis, program technical reviews, joint and coalition liaison, Integrated Master Schedule (IMS), architecture system and service views, systems engineering documentation, and software and standards baseline configuration management.</p> <p>Systems Engineering Policy Support:</p> <p>Serves as the Army level concurrence authority on System Engineering Plans (SEP) and Program Protection Plans (PPP) for all Army Major Defense Acquisition Programs. Teams of subject matter experts conduct reviews of products to ensure compliancy to OSD and Army requirements. Army Representative for the FY14 NDAA Section 937 Congressional requirement to stand up a Joint Federated Assurance Center (JFAC) to develop work plans, manage funding, track progress and report regular status to Army Leadership and OSD Leadership. In addition also maintains direct collaboration and communication with Army Research Developing Engineering Centers (RDECs), Army Research Labs, and specifically the Software, Hardware and Cyber Subject Matter Experts and Communities of Practice, to define, federate, maintain and evolve, Army Cyber, System Security Engineering, and allow access to available Assurance capabilities to meet today's threats and emerging threats. Conduct oversight, review, and development assistance for PPPs to determine/review risks/ vulnerabilities associated with Security Engineering Best Practices and assist with the development of sound mitigation strategies. Ensure program protection strategies use good systems engineering discipline and are referenced in the Systems Engineering Plan (SEP) and the Cyber Security Strategy (CSS). Provide advice and experience to influence system design in support of developing effective program protection strategies. Participate in the staffing of the PPP with applicable agencies across the Department of the Army (DA) staff. Conduct</p>				

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Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>client advocacy and education forums (Road Show presentations) amongst Army PEOs, DASD(SE), other agencies and joint service stakeholders to inform and promulgate Critical Program Information (CPI) development best practices throughout the acquisition community. Interface as an executive agent on matters of Anti-Tamper and Supply Chain Risk Management with program personnel, systems security engineers and service providers. Act on behalf of the office of primary responsibility for Anti-Tamper and the Acquisition Security Database. Allows the Army to make informed tradeoffs that support system design and/or modification decisions upfront and early. Army systems require protection from proliferation and exploitation, for as long as possible, so they can effectively perform their missions in various operational environments. With OSD and Army laboratories ensure future access to state of the art microelectronics to reduce sole source dependence on microelectronics designs. Provide alternate assurance options for critical DoD unique parts as part of the US Microelectronic Strategy. Advance the Army's capability to perform hardware analysis of critical components transition to new microelectronics trust model that leverages commercial state of the art practices. Provide systems engineering advice on Critical Intelligence Parameter Breech recommendations through emerging Acquisition, Intelligence, Requirements (AIR) policy directives. Responsible for the conduct of Post-Preliminary and Critical Design Review (PDR/CDR) and Independent Technical Risk Assessments (ITRA) for all Army ACAT I and II programs where the Army Acquisition Executive serves as the Milestone Decision Authority. FY17 NDAA Sec 807 directs a change in Title 10 USC 2448b that the MDA will ensure an ITRA is conducted on all programs reaching MS A after 1 October 2016. The reviews will provide recommendations on Technical Risk and PDR/CDR sufficiency will be included in the Milestone Decision Authority (MDA) package for the Milestone Review, approval, and certification. Coordinate and prioritize requests for threat analysis of suppliers of critical components, assure the identification of mission critical functions and critical components as well as Trusted Systems and Networks (TSN) planning and implementation activities in Program Protection Plans. Assist in the conduct of criticality analysis to identify mission critical functions and critical components thus reducing the vulnerability of such functions and components through secure system design.</p> <p>Support the certification of Modular Open Systems Approach (MOSA) as defined in Title 10 USC, section 2446b (e). Confirm that Army programs proceeding to Milestone B have incorporated clearly defined major subsystem interfaces between the major system platform and major system components, between major system components, and between major system platforms. That these major system interfaces are consistent with the widely supported and consensus-based standards that exist at the time of the milestone decision. Assess if Army programs have arranged to obtain specific, appropriate and necessary intellectual property rights with respect to such major system interfaces upon completion of the development of the major system platform Lead the assessment of Reliability, Availability, and Maintainability (RAM) efforts of Army programs of record. Assist programs in the research for root causes of reliability issues and provide detailed assessment along with recommendation to senior leadership.</p> <p>Synchronize the Army's Modeling and Simulation Strategy with OSD's Digital Engineering Strategy to focus current and emerging efforts on the efficient development and use of M&S and Model Based Systems Engineering capabilities in order to advance the Army's system development efforts.</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>Provide engineering support to OSD and the Army to oversee the growth of civilian talent to support Assistant Secretary of the Army (Acquisition, Logistics and Technology) Systems Engineering requirements. This includes recommending improvements in Training, Education, Rotational Assignments, and Mentoring a Systems Engineering (SE) work force across the Army. SEPS will support ASA(ALT) in the development of the Human Capital Strategic Plan (HCSP) and refinement of the System Engineering Functions with OSD.</p> <p>Common Operating Environment (COE): Provide Army representation at a wide spectrum of DoD and Industry professional forums for systems engineering, standards, and open design communities of practice.</p> <p>Provide formal staffing review and analysis of Service and DoD policy and strategy documents for impacts to Army modernization priorities, digital engineering, technical standards, and COE equities.</p> <p>Provide review and analysis of change requests and updates to the DoD Information Technology Standards Repository (DISR) baseline for impacts to Army inter and intra service interoperability with Joint and Coalition partners.</p> <p>Provide configuration management and knowledge management of approved Army baselines for architecture and technical standards in support of Common Operating Environment (COE) capability deliveries and Service level implementation of DoD Digital Engineering guidance and principles.</p> <p>Continue hosting systems engineering forums to promote convergence of legacy combat systems towards a common software and hardware infrastructure, effective migration of Army sensing capabilities towards common data sharing interface standards, and alignment of enterprise capabilities with tactical level services.</p> <p>Maintain enterprise wide Fielded Software Tracker Database via data curation, user requested functionality enhancements, systems administration, and user help desk support.</p> <p>Continue hosting bi-weekly and monthly systems engineering forums to optimize risk reduction and preparatory actions prior to execution of Army Interoperability Certification (AIC) test events.</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
Host bi-weekly and monthly systems engineering forums to optimize risk reduction and preparatory actions prior to execution of Army Interoperability Certification (AIC) test events.					
FY 2019 to FY 2020 Increase/Decrease Statement: Decrease in funding in support of the Army's Modernization priorities.					
Title: COE			2.161	1.198	-
Description: Provide governance and implementation oversight and for the Army SoS Common Operating Environment (COE) and synchronized programmatic planning for COE crossing multiple PEOs and Computing Environments (CEs) in coordination with the Army Staff, Training and Doctrine Command, Research and Development Command, Army Materiel Command, Army Testing and Evaluation Command, the Joint Staff and OSD Staff. This includes providing integrated, cross-portfolio system engineering technical products and configuration management cost benefit analysis, support for TRADOC requirements development and G-8 staffing through AROC approval. Lead COE standards development in support of Army and DoD Standards bodies and integrated architecture development. Provide COE related Verification & Validation (V&V) planning and assessment including management of the Federated Integration Environment, Cross-CE risk reduction and Army Interoperability Certification. Serve as the DA Staff advocate for COE and Cross-Cutting Capabilities (CCCs) development and Application Migration. Provides funding for supervision of Subject Matter Expert Staff used to support execution the tasks following.					
FY 2019 Plans: This organization provides engineering oversight for Cross-Cutting Capabilities development, standards, interoperability testing and Army Interoperability Certification and Governance for the Army System of Systems Common Operating Environment (COE). Products include cross portfolio system engineering products and architecture; synchronized acquisition planning for COE crossing multiple PEOs and Computing Environments (CEs); advocacy for COE and Cross Cutting Capabilities (CCCs) within the DA Staff, senior decision bodies and Army commands; oversight of the COE Integration Assessment Program (CIAP); leadership of the COE Standards Working Group; and Data Management of COE policy, guidance, specifications, and Engineering Change Proposals. 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 Mission Command tactical network and migration of legacy systems through divestiture. Funds provide staff support to the Executive Director System of Systems Engineering and Integration and the Army Acquisition Executive on COE matters, assessments and reports, and information to support decision-making. Funds provide configuration management, including software version tracking for fielded baselines and configuration management board review of system readiness for certification for to be fielded					

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>baselines. Funds provide Federated Integration Environment Coordination. Funding support includes synchronized analysis, planning information and presentations to inform the Strategic Portfolio Analysis Review (SPAR).</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement: Decrease in funding is support of Army's Modernization priorities. As of FY 2020 reduced COE governance included in Army System of Systems Engineering and Analysis.</p>					
<p>Title: Cyber</p> <p>Description: This project funds cyber support to PEOs/PMs to include cybersecurity support to risk management framework, cyber engineering and architecture development, industry cybersecurity engagement, and cyber program oversight and governance, which ensures the secure, affordable, and effective delivery of Army materiel solutions that address critical Army modernization objectives, as well as the delivery of agile and advanced cyber solutions to equip the Army's offensive and defensive forces in the cyberspace domain. These funds support synchronization, analysis and integration of Cyber functions and products.</p> <p>FY 2019 Plans: These funds support synchronization, analysis and integration of Cyber functions and products. Cyber Programs Tasks: Manage the Cyber Acquisition Task Force (CATF) to provide to provide oversight and governance of cyber program planning and execution activities to include portfolio prioritization, resourcing alignment, requirements validation (Cyber Needs Forms, Requirements Definition Packages, and Capability Drops) and capability synchronization/deconfliction across OCO, DCO, PCTE, Cyber Situational Understanding, and related DoDIN initiatives. Co-lead Line of Effort (LOE) #3: Capability Development (Army Cyberspace Strategy) and provide weekly updates to the Army Cyberspace Council on the goals and objectives LOE #3 Project Plan in collaboration with TRADOC, ARCYBER, and HQDA. Provide architecture and system of systems engineering support to the cyber program portfolio to ensure solutions are optimally designed for efficiency and effectiveness. Support assignment of office of primary responsibility for emerging programs like Cyber Situational Understanding IS ICD and acquisition decisions for all programs. Serve as primary ASA(ALT) POC for joint deconfliction to include programs such as Unified Platform and Joint Command and Control and Situational Awareness and authorities such as USCYBERCOM's Section 807 Acquisition Authority. Identify disruptive and innovation technology for rapid prototyping for the primary purpose of dramatically improving the security posture of the Army's systems (weapon, business, or C4ISR). Host meetings and demonstrations, conduct market research, and coordinate with Army Contracting Command (ACC), PEOs, ARCYBER, TRADOC, AMC, and RDECOM as required. Establish improved transition of S&T projects into cyber programs of record.</p> <p>Mission Assurance and Resilience:</p>			4.256	3.310	2.931

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>Updates to the Cyber Threat Convergence as related to the current threat actors identified by the intel community.</p> <p>Maintenance of the Cyber Focal SharePoint site as necessary to ensure access to Cyber Focal, Cyber Programs, CIO Governance, Mission Assurance & Resilience, Cybersecurity, Defense Industrial Base, Internal Cyber Focal, HBSS/AESS, Unsupported Software, Windows 10 Migration, IAVM Patching, Cyber Engineering, Cyber Acquisitions Task Force, Innovation Challenge and Cyber I-WSR. Assist with the advancement of electronic patching compliance implementation. Continue to improve and simplify identification and reporting of cyber vulnerabilities.</p> <p>Monitor and facilitate PEO's and PM's migration towards Windows 10 for both their Desktop IT and all Windows based PoRs. Assist and respond with data call requests, synchronization efforts and IPR's from DoD CIO, CIO G6, ARCYBER, and the updates to the VCSA. Provide Army stakeholders with weekly updates to include which systems</p> <p>Monitor and track PEO's and PM's migration out of Windows XP and Server 2003 and report current numbers that will feed the DoD Cybersecurity Scorecard that tracks the use and migration out of unsupported software for all Services.</p> <p>Coordination of DoD and Army PKI and Authentication requirements across PEO's and PM's. Coordinate and review all program briefings, and input to the PKE Exemption SharePoint site.</p> <p>Lead for AVRT design, development and implementation, HBSS/AESS integration, IAVA patching.</p> <p>FY16 NDAA S. 1647 cyber vulnerabilities assessments. Manages, leads and develops annual and final reports, analysis, testing and assessments related to cyber vulnerabilities testing of weapon systems/PoRs. Provides recommendations and guides follow on activities as related to ASA(ALT) weapon systems/PoRs. Supports and leads capstone/Phase 3 NDAA 1647 activities.</p> <p>Supports cyber hardening events (1553 bus activities and DCGS-A) and other engagements in terms of FY16 NDAA S. 1647 application, leveraging lessons learned and analyses opportunities to further cyber resiliency goals.</p> <p>Co-lead responsibilities to coordinate, shape, develop and support G 3/5/7 DAMO-CY efforts for the creation of an enduring cyber resiliency program/effort for legacy systems in the Operations and Sustainment phase.</p> <p>Monitor, coordinate and facilitate responses back to DoDIG requirements related to cyber posture and plans in terms of Aviation/ UAS inquiries. In addition, respond and coordinate for audit reports (AAA, DAIG, etc.) that may arise that are related to the cyber mission assurance and resilience area.</p> <p>Support the Wideband Global SATCOM cyber working group with ASA(ALT) Cyber SME input to their study guidance activities.</p> <p>Support, facilitate, and coordinate Supply Chain Risk Management OPT activities and initiatives; analyze, assess and implement recommendations and findings where appropriate to ensure cyber resilience for ASA(ALT) POR's.</p> <p>Cybersecurity Tasks:</p> <p>Obtain Authorization to Operate (ATOs) for Army Rapid Capabilities (Army RCO) systems through the Risk Management Framework (RMF) for the USAEUR ONS Fielding.</p> <p>Lead the ASA(ALT) community and associated PEOs in preparing for upcoming Command Cyber Readiness Inspections (CCRI), unannounced CCRI's, and the addition of Command Cyber Operational Readiness Inspections (CCORI). Continue to assist the</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>local NECs with acquiring support for patching, configuring, and implementing Programs of Record to increase cyber posture and achieve passing scores. Continue to support 7th Signal Command as the PEO liaison.</p> <p>Monitor Army Rapid Capabilities (Army RCO) systems through the Risk Management Framework (RMF), complete a Security Controls Assessor-Validator (SCA-V) assessment if systems will continue operation in FY19 and beyond.</p> <p>Defense Industrial Base (DIB) Cyber Security Tasks:</p> <p>Sustain or improve current damage assessment case completion levels at the Defense Cyber Crime Center.</p> <p>Continue to increase the Army acquisition workforce's awareness of Defense Industrial Base cybersecurity threats and mitigations and minimize unauthorized disclosure of Army information.</p> <p>Engage with the DIB through the DoD CIO DIB CS Program Office to encourage cyber information sharing and address potential long-term issue regarding enhanced cybersecurity and cyber incident damage assessment (CIDA) reporting policies.</p> <p>Deploy final operational capability for the Joint CIDA case management solution to share case data and metrics across all DOD damage assessment management offices and facilitate enterprise-wide risk analysis.</p> <p>In collaboration with the Army Intelligence and Security Command, secure funding to update information technology to meet future damage assessment demands.</p> <p>Work with the OSD Damage Assessment Management Office to modernize damage assessment tool suites to manage increased incident reporting and to identify trends in unauthorized technology transfers.</p> <p>Continue to integrate CIDA operations with Joint Acquisition Protection & Exploitation Cell (JAPEC) to facilitate proactive protection of Army controlled technical information (CTI) residing and transiting on contractor-owned systems.</p> <p>Update AR 70-77 to codify CTI identification and safeguarding processes and to improve intelligence support to CIDA process.</p> <p>Conduct cost benefit analysis additional Army resource requirements to meet JAPEC needs. Assist PEOs, PMs, and ASA(ALT) with forecasting costs and resources required with protection of CTI within the DIB, damage assessment recovery operations, and maintaining technology superiority.</p> <p>FY 2020 Plans:</p> <p>Strategic:</p> <p>Lead a coordinated, comprehensive acquisition approach to enhance cyber resiliency and survivability across ASA(ALT) communities and the materiel enterprise. Optimize cybersecurity as a critical enabler of capability delivery. Facilitate and ensure execution of cyber-related tasks and efforts by appropriate ASA(ALT) organizations. Represent and advocate for ASA(ALT) cyberspace equities in external governance bodies, senior leader forums, and partner engagements. Shape cyberspace policy, directives and orders that may impact acquisition. Deliver systemic and crosscutting value to PMs executing cyber-related missions.</p> <p>Cybersecurity:</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>Lead the cybersecurity program for ASA(ALT). Fulfill cybersecurity functions mandated by public law, federal directives, and DoD/Army policy, and ensure PEOs and organizations meet all requirements. Perform delegated Authorizing Official functions for ASA(ALT), ensuring HQ Business systems maintain an acceptable level of risk and continue authorization throughout the system lifecycle. Provide oversight and management standards for the ASA(ALT) cybersecurity workforce. Support PEOs in implementing the Risk Management Framework, communications security (COMSEC) management, Federal Information Security Management Act (FISMA) compliance, and Command Cyber Readiness Inspections (CCRI). Provide technical support to facilitate compliance with ARCYBER orders and directives addressing software updates, patching, reporting, and named cyber operations.</p> <p>Support the secure operation of ASA(ALT) activities. Lead coordination across PEOs in preparing for both planned and unannounced Command Cyber Readiness Inspections (CCRI). Assist local Network Enterprise Centers as needed to support ASA(ALT) equities. Engage 7th Signal Command as the PEO liaison. Report to HQDA CIO/G-6 and ARCYBER for cybersecurity related requirements and issues. Monitor and coordinate response to the various cybersecurity inspection programs and audit findings related to Department of Defense Inspector General (DoDIG), APPA, and Army Audit Agency (AAA) audits.</p> <p>Co-lead RMF process improvement initiatives for the Army, lead for ASA(ALT). In connection with (ICW) HQDA CIO/G-6 and NETCOM, ensure resources are available to conduct further pilot efforts. Develop policies, procedures, and lessons learned to ensure RMF optimization for the Army.</p> <p>Co-lead the ASA(ALT) Chief Information Officer (CIO)/Chief Information Security Officer (CISO) Council. Ensure PEO involvement and coordination to meet the objectives and requirements identified in the council charter.</p> <p>Support critical modernization of unsupported software for secure operations. Monitor and facilitate PEO/PM migration plans and execution away from unsupported client/server operating systems and applications (e.g. Windows 10, Server 2003). Assist and respond with data call requests, synchronization efforts, and IPRs with DoD CIO, HQDA CIO/G-6, ARCYBER, and the Vice Chief of Staff of the Army (VCSA). Provide required data to support DoD Cybersecurity Scorecard.</p> <p>Coordinate DoD and Army requirements for public key infrastructure (PKI) and Multi-Factor Authentication across PEOs and PMs. Coordinate and review all program briefings, and input to the PKE Exemption SharePoint site.</p> <p>Coordinate priorities and tasks for ASA(ALT) from senior leadership forums such as the CIO Executive Board (CIO-EB).</p> <p>Provide holistic expertise and support for Cross-Domain Solutions (CDS). Establish and facilitate Army Tactical CDS WG to provide collaboration among tactical program stakeholders. Identify requirements and interoperability issues affecting multiple</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>systems in the tactical space. Evaluate emerging CDS technologies for the tactical environment and provide feedback to industry to shape investments.</p> <p>Mission Assurance/Resilience & Engineering: Facilitate technical exchange across ASA(ALT) community by maintaining Cyber Focal SharePoint site to collect and main PoR data as needed. Offload legacy data to authoritative sources/repositories as feasible. Facilitate internal coordination across Cyber Focal.</p> <p>Support Cyber Operational Resiliency Assessment-Platform (CORA-P) program. Facilitate identification, prioritization, and approval of vulnerability mitigations and advanced cyber hardening efforts for critical systems. Leverage lessons learned and analyses opportunities to further cyber resiliency goals.</p> <p>Enhance cyber assessments within acquisition process. Coordinate with testing community, PMs/PEOs, OSD/Joint Staff, to implement improvements to cyber assessment process across all ASA(ALT) lifecycles. This process will build on the community-established needs to better integrate testing (Red/Blue/Cyber Ranges), supply chain risk management (beyond Trusted Systems & Networks process), cyber teams (certification/standards), threat capabilities/intent, and risk-to-mission perspective. Institutionalize lessons learned and guidance via Army Acquisition Executive (AAE) directive for PM training and implementation.</p> <p>Enhance cyberspace acquisition governance. Operationalize the Cyber Acquisition Task Force (CATF) to synchronize and prioritize cyberspace capabilities in coordination with other critical governance forums. Army requires whole-of-service governance approach to accelerate and provide flexible delivery of cyberspace capabilities. Establish clear battle-rhythm with TCM Cyber, ARCYBER, and DAMO-CY G-3/5/7 working and assessment group. Integrate with CCIDS Configuration Control Board (CCB) and Cyberspace Requirements Evaluation Board (CREB). Ensure communications across the community.</p> <p>Provide ASA(ALT) technical representation and expertise at Unified Platform (UP) and Joint Cyberspace Command & Control (JCC2) decision forums. Ensure technical compatibility of joint efforts with current/planned Army systems across PEOs and advocate for Army programmatic equities in cyberspace. Specifically, Army will maximize coordination of Army capability and materiel development, to ensure both align to and support UP/JCC2 objectives. Improve communication and information sharing across all stakeholders to support PEO interests.</p> <p>Improve ASA(ALT) System Security Engineering (SSE). Set conditions for the formal appointment of the SSE workforce within each PEO. Establish duties with prescribed training, experience, and certification requirements IAW DoD 8570. Facilitate collaboration across ASA(ALT), and with the cybersecurity community.</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019		
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		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
Improve cyberspace supply chain risk management (CySCRM). Support OCSE efforts with Army CySCRM WG to maintain readiness of Army forces, capabilities, and systems by identifying, scoping, and mitigating risks to the supply chain. The WG will provide a forum for stakeholders to review intelligence reports and assessments related to SCRM; review current SCRM policies, roles, and responsibilities; identify potential gaps; recommend mitigations; in accordance with AR 70-77, maximize the integration of SCRM across system lifecycles; and interface with joint and interagency SCRM activities to ensure whole-of-government execution. As needed, conduct engineering assessments of crosscutting cyber focused architectures, solutions, and capabilities proposed by PORs, CFTs, and RCO. FY 2019 to FY 2020 Increase/Decrease Statement: Decrease in funding to support Army's Modernization priorities.				
Title: Facilities and IT Support Description: Provides funding for infrastructure/facilities and IT support. FY 2019 Plans: Provides funding for infrastructure/facilities. It includes the costs for purchasing/leasing hardware, software, computers, communications equipment and services. FY 2020 Plans: Provides funding for infrastructure/facilities. It includes the costs for purchasing/leasing hardware, software, computers, communications equipment and services. FY 2019 to FY 2020 Increase/Decrease Statement: Decrease in funding to support Army's Modernization priorities.		0.757	0.212	0.186
Title: Rapid Capabilities Office (RCO) Support Description: Rapid Capabilities Office (RCO) Support FY 2020 Plans: Expedite assessment, development and fielding of select, critical Army systems, conduct independent technical assessments of weapon or combat support system capabilities and vulnerabilities, provide holistic solutions that inform and provide essential information on the effects to force structure, training and sustainment, and identify cutting edge technologies for potential military application in support of critical capability gaps. FY 2019 to FY 2020 Increase/Decrease Statement:		-	-	4.33

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
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B. Accomplishments/Planned Programs (\$ in Millions)										FY 2018	FY 2019	FY 2020
RCO Government matrix and contractor resource funding and infrastructure cost transitioned from PE 0604798A to PE 0605054A (Project FI3) in FY 2020.												
Title: FY 2019 SBIR / STTR Transfer										-	0.339	-
FY 2019 Plans: FY 2019 SBIR / STTR Transfer												
FY 2019 to FY 2020 Increase/Decrease Statement: FY 2019 SBIR / STTR Transfer												
Accomplishments/Planned Programs Subtotals										19.683	15.600	17.807
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost	
• DY3: <i>NIE Test & Evaluation</i>	49.220	22.660	16.851	-	16.851	17.326	17.356	16.522	16.851	Continuing	Continuing	
• DY5: <i>Production/Field Coordination for Capability Sets</i>	4.161	4.239	2.157	-	2.157	2.224	2.213	2.185	2.304	Continuing	Continuing	
• DZ6: <i>Army Integration Management & Coordination</i>	8.315	6.751	5.819	-	5.819	5.906	6.060	6.209	6.238	Continuing	Continuing	
• FG7: <i>Emerging Technology Initiatives</i>	58.007	-	0.000	-	0.000	-	-	-	-	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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
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Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Army System of Systems Engineering and Analysis	TBD	TBD : Various	44.603	-		-		-		-		-	0.000	44.603	-
Common Operating Environment (COE)	TBD	TBD : Various	12.969	-		-		-		-		-	0.000	12.969	-
Cyber	TBD	TBD : Various	4.764	-		-		-		-		-	0.000	4.764	-
Army System of System Engineering and Analysis Core Labor	Allot	SoSE&I : Various	-	6.479	Nov 2017	4.522	Nov 2018	3.884	Nov 2019	-		3.884	Continuing	Continuing	-
Army System of System Engineering and Analysis Matrix Labor	MIPR	CERDEC : Various	-	1.482	Nov 2017	0.913	Nov 2018	0.884	Nov 2019	-		0.884	Continuing	Continuing	-
Army System of System Engineering and Analysis SETA Labor	C/CPFF	TBD : Various	-	3.091	Nov 2017	1.025	Nov 2018	0.982	Nov 2019	-		0.982	Continuing	Continuing	-
Army System of System Engineering and Analysis FFRDC Labor	FFRDC	MITRE : Various	-	3.956	Nov 2017	4.081	Nov 2018	3.563	Nov 2019	-		3.563	Continuing	Continuing	-
Common Operating Environment (COE) Core Labor	Allot	SoSE&I : Various	-	1.161	Nov 2017	1.198	Nov 2018	1.045	Nov 2019	-		1.045	Continuing	Continuing	-
Cyber Core Labor	Allot	SoSE&I : Various	-	2.076	Nov 2017	2.210	Nov 2018	1.869	Nov 2019	-		1.869	Continuing	Continuing	-
Cyber Matrix Labor	MIPR	CERDEC : Various	-	0.300	Nov 2017	0.391	Nov 2018	0.269	Nov 2019	-		0.269	Continuing	Continuing	-
Cyber SETA Labor	C/CPFF	TBD : Various	-	0.248	Nov 2017	0.206	Nov 2018	0.224	Nov 2019	-		0.224	Continuing	Continuing	-
Cyber FFRDC Labor	FFRDC	MITRE : Various	-	0.633	Nov 2017	0.503	Nov 2018	0.570	Nov 2019	-		0.570	Continuing	Continuing	-
RCO Core Labor	C/BA	TBD : VA	-	-		-		4.331	Nov 2019	-		4.331	0.000	4.331	-
FY 2019 SBIR / STTR Transfer	TBD	Various : None	-	-		0.339		-		-		-	0.000	0.339	-
Subtotal			62.336	19.426		15.388		17.621		-		17.621	Continuing	Continuing	N/A
Remarks															
Note: 1 - Program Activities performed at Aberdeen Proving Ground (MD), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), TACOM (Warren, MI)															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>						Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>			
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Facilities and IT Support	TBD	Various: Note: 1 : TBD	3.920	0.257	Nov 2017	0.212	Nov 2018	0.186	Nov 2019	-		0.186	0.000	4.575	-
Subtotal			3.920	0.257		0.212		0.186		-		0.186	0.000	4.575	N/A
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 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			66.256	19.683		15.600		17.807		-		17.807	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army																Date: March 2019												
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										
Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CS19 CS TDP (A/B Kit Design)	■	■																										
CS21 Golden Vehicle / NRE List [ABCT/SBCT]	■	■	■	■																								
CS21 Preliminary Reference IBOI [IBCT]	■	■																										
CS20 Unit NBOI (NRE Baseline) IBCT	■	■	■																									
CS20 Golden Vehicle / NRE List		■	■	■																								
CS19 Procurement			■	■																								
CS19 LTI Integration				■	■																							
CS19 Receive Kits (Production)				■	■																							
Capability Set (CS) Design:																												
CS19 Architecture Design	■	■																										
CS20 Architecture Design	■	■	■	■	■	■	■																					
CS21 Architecture Design					■	■	■	■	■	■	■																	
CS22 Architecture Design									■	■	■	■	■	■	■													

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	

Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
CS23 Architecture Design																																
CS24 Architecture Design																																
Common Operating Environment (COE):																																
COE V3.0 CPCE/MCE CDR																																
COE V3.0 CPCE/MCE OT at NIE 18.2																																
COE V3.0 AIC																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CS19 CS TDP (A/B Kit Design)	1	2018	2	2018
CS21 Golden Vehicle / NRE List [ABCT/SBCT]	4	2017	4	2018
CS21 Preliminary Reference IBOI [IBCT]	4	2017	2	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
Capability Set (CS) Design:	1	2018	4	2019
CS19 Architecture Design	1	2017	2	2018
CS20 Architecture Design	1	2018	2	2019
CS21 Architecture Design	1	2019	2	2020
CS22 Architecture Design	1	2020	2	2021
CS23 Architecture Design	1	2021	2	2022
CS24 Architecture Design	1	2022	2	2023
Common Operating Environment (COE):	1	2018	4	2019
COE V3.0 CPCE/MCE CDR	1	2018	1	2018
COE V3.0 CPCE/MCE OT at NIE 18.2	4	2018	4	2018
COE V3.0 AIC	1	2019	1	2019

Note

Capability Set (CS)

Common Operating Environment (COE):

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>
Army Interoperability Certification (AIC), Command Post Computing Environment (CPCE), Critical Design Review (CDR), Mounted Computing Environment (MCE), Network Integration Evaluation (NIE), Operational Test (OT)		

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
DZ6: Army Integration Management & Coordination	-	8.315	6.751	5.819	-	5.819	5.906	6.060	6.209	6.238	0.000	45.298
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This project funds resources that support the technical and management (i.e. headquarters, resource management, acquisition, human resources, and operations) aspects of the Army Rapid Capabilities Office (RCO). Effectively utilizing these resources reduces overall cost to the program. All core RCO personnel costs will be funded out of this project.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2018	FY 2019	FY 2020	
Title: Program Management and Integration									7.602	6.129	5.819	
Description: This effort funds for all "shared" resources that supports SoSE&I and the Army Rapid Capabilities Office (RCO).												
FY 2019 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. It also includes program oversight for Program Manager, Position, Navigation, and Timing (PNT).												
FY 2020 Plans: This project funds Government Labor, specifically resources that provide program management, resource management, acquisition, human resources, and operations aspects of the Army Rapid Capabilities Office (RCO).												
Funding for RCO Government technical resources aligned under project DY7.												
FY 2019 to FY 2020 Increase/Decrease Statement: RCO Program Management contract support and Integration costs transitioning to PE0605054A project FI3.												
Title: Facilities and IT Support									0.713	0.544	-	
Description: Provides funding for infrastructure/facilities and IT support.												
FY 2019 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army								Date: March 2019			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2018	FY 2019	FY 2020	
Provides funding for infrastructure / facilities, and IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services.											
FY 2019 to FY 2020 Increase/Decrease Statement: RCO facilities and IT Support moved to PE0605054A project FI3											
Title: FY 2019 SBIR / STTR Transfer								-	0.078	-	
FY 2019 Plans: FY 2019 SBIR / STTR Transfer											
FY 2019 to FY 2020 Increase/Decrease Statement: FY 2019 SBIR / STTR Transfer											
Accomplishments/Planned Programs Subtotals								8.315	6.751	5.819	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• DY3: <i>NIE Test & Evaluation</i>	49.220	22.660	16.851	-	16.851	17.326	17.356	16.522	16.851	Continuing	Continuing
• DY5: <i>Production/Field Coordination for Capability Sets</i>	4.161	4.239	2.157	-	2.157	2.224	2.213	2.185	2.304	Continuing	Continuing
• DY7: <i>Army Systems Engineering, Architecture & Analysis</i>	19.683	15.600	17.807	-	17.807	17.534	17.659	17.870	17.043	Continuing	Continuing
• FG7: <i>Emerging Technology Initiatives</i>	58.007	-	0.000	-	0.000	-	-	-	-	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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>						Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>			
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SoSE&I Program Management and Integration	TBD	Various Note: 1 : TBD	28.738	7.602	Nov 2017	6.129	Nov 2018	5.819	Nov 2019	-		5.819	Continuing	Continuing	Continuing
FY 2019 SBIR / STTR Transfer	TBD	Various : None	-	-		0.078		-		-		-	0.000	0.078	-
Subtotal			28.738	7.602		6.207		5.819		-		5.819	Continuing	Continuing	N/A
Remarks Note: 1 - Program Activities performed at Aberdeen Proving Ground (MD), TACOM (Warren MI), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC).															
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Facilities and IT Support	TBD	Various Note: 1 : TBD	3.807	0.713	Nov 2017	0.544	Nov 2018	-		-		-	Continuing	Continuing	Continuing
Subtotal			3.807	0.713		0.544		-		-		-	Continuing	Continuing	N/A
Remarks Note:1 - Program Activities performed at Aberdeen Proving Ground (MD), TACOM (Warren MI), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), FT Bliss (TX), White Sands Missile Range (NM).															
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			32.545	8.315		6.751		5.819		-		5.819	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army																Date: March 2019												
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										
Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Capability Set 17 Fieldings																												
CS17 New Equipment Training (NET)																												
CS17 New Equipment Fielding (NEF)																												
JWA 18.1 Planning -- Execution																												
AWA 18.1 Event																												
AWA 18.1 Event Analysis & Summary																												
NIE 18.2 Planning -- Execution																												
NIE 18.2 Planning/Prep - ValEx/CommEX/Pilot																												
NIE 18.2 Event																												
NIE 18.2 Event Analysis & Summary																												
Capability Set 18 Fieldings																												
CS18 Build and Integration																												
CS18 New Equipment Training (NET)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army																Date: March 2019												
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										
Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CS18 New Equipment Fielding (NEF)																												
JWA 19.1 Planning -- Execution																												
AWA 19.1 Planning/Prep - ValEx/CommEX/Pilot																												
AWA 19.1 Event																												
AWA 19.1 Event Analysis & Summary																												
Capability Set 19 Fieldings																												
JWA 18.1 Planning - Execution																												
NIE 18.2 Planning - Execution																												
JWA 19.1 Planning - Execution																												
NIE 19.2 Planning - Execution																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Capability Set 17 Fieldings	1	2015	1	2018
CS17 New Equipment Training (NET)	1	2017	2	2018
CS17 New Equipment Fielding (NEF)	1	2017	1	2018
JWA 18.1 Planning -- Execution	4	2017	3	2018
AWA 18.1 Event	1	2018	1	2018
AWA 18.1 Event Analysis & Summary	3	2018	3	2018
NIE 18.2 Planning -- Execution	1	2018	1	2019
NIE 18.2 Planning/Prep - ValEx/CommEX/Pilot	4	2016	3	2018
NIE 18.2 Event	3	2018	3	2018
NIE 18.2 Event Analysis & Summary	3	2018	4	2018
Capability Set 18 Fieldings	1	2016	1	2019
CS18 Build and Integration	3	2016	4	2018
CS18 New Equipment Training (NET)	1	2018	2	2019
CS18 New Equipment Fielding (NEF)	1	2018	1	2019
JWA 19.1 Planning -- Execution	4	2018	3	2019
AWA 19.1 Planning/Prep - ValEx/CommEX/Pilot	3	2016	1	2019
AWA 19.1 Event	1	2019	1	2019
AWA 19.1 Event Analysis & Summary	1	2019	2	2019
Capability Set 19 Fieldings	1	2017	1	2020
JWA 18.1 Planning - Execution	3	2016	3	2018
NIE 18.2 Planning - Execution	2	2017	2	2019
JWA 19.1 Planning - Execution	3	2016	4	2019

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army				Date: March 2019	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>	
		Start		End	
Events		Quarter	Year	Quarter	Year
NIE 19.2 Planning - Execution		2	2018	1	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
FG7: Emerging Technology Initiatives	-	58.007	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	58.007
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 was 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

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
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				
Electronic Warfare (EW) Position, Navigation and Timing (PNT) Survivability 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 2018	FY 2019	FY 2020
Title: Maturation, Prototyping, Assessment, and Integration of Emerging and Essential Technologies										58.007	-	-
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.												
Accomplishments/Planned Programs Subtotals										58.007	-	-
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost	
• DY3: NIE Test & Evaluation	49.220	22.660	16.851	-	16.851	17.326	17.356	16.522	16.851	Continuing	Continuing	
• DY5: Production/Field Coordination for Capability Sets	4.161	4.239	2.157	-	2.157	2.224	2.213	2.185	2.304	Continuing	Continuing	
• DY7: Army Systems Engineering, Architecture & Analysis	19.683	15.600	17.807	-	17.807	17.534	17.659	17.870	17.043	Continuing	Continuing	
• DZ6: Army Integration Management & Coordination	8.315	6.751	5.819	-	5.819	5.906	6.060	6.209	6.238	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												

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) FG7 / <i>Emerging Technology Initiatives</i>
<p>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.</p>		
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>						Project (Number/Name) FG7 / <i>Emerging Technology Initiatives</i>			
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EW Program Management	Various	PM Electronic Warfare & Cyber : APG, MD	-	1.618		-		-		-		-	0.000	1.618	-
PNT Program Management	Various	PM PNT : Various	-	1.279		-		-		-		-	0.000	1.279	-
Subtotal			-	2.897		-		-		-		-	0.000	2.897	N/A
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Maturation, Prototyping, Assessment, and Integration of Emerging and Essential Technologies	C/TBD	TBD : TBD	27.665	27.596		-		-		-		-	Continuing	Continuing	Continuing
EW VROD/VMAX Software Development	MIPR	I2WD : APG, MD	-	1.197		-		-		-		-	0.000	1.197	-
EW Air Risk Reduction	C/CPFF	General Atomics : Multiple	-	7.760		-		-		-		-	0.000	7.760	-
EW TORO Development	MIPR	Air Force : TBD	-	5.300		-		-		-		-	0.000	5.300	-
EW Sabre Fury Development	C/CPFF	SRC : Syracuse, NY	-	2.088		-		-		-		-	0.000	2.088	-
EW ISA Software Development	C/CPFF	MTEQ : APG, MD	-	0.914		-		-		-		-	0.000	0.914	-
EW EWPMT Development	C/CPFF	Raytheon : Ft. Wayne, IN	-	1.977		-		-		-		-	0.000	1.977	-
PNT D3E Integration	C/CPFF	GPS Source : Pueblo, CO	-	0.752		-		-		-		-	0.000	0.752	-
Subtotal			27.665	47.584		-		-		-		-	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>						Project (Number/Name) FG7 / <i>Emerging Technology Initiatives</i>			
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EW VROD/VMAX Information Assurance	MIPR	I2WD : APG, MD	-	0.522		-		-		-		-	0.000	0.522	-
EW Prophet Safety Support	MIPR	CECOM : APG, MD	-	0.075		-		-		-		-	0.000	0.075	-
PNT Engineering Support	C/CPFF	CERDEC : APG, MD	-	1.178		-		-		-		-	0.000	1.178	-
Subtotal			-	1.775		-		-		-		-	0.000	1.775	N/A
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EW Sabre Fury Software Test and Information Assurance	MIPR	TBD : TBD	-	0.950		-		-		-		-	0.000	0.950	-
EW RIM Test Articles	C/IDIQ	Army Research Laboratory : APG, MD	-	2.450		-		-		-		-	0.000	2.450	-
EW EWPMT Test	C/CPFF	Raytheon : Ft. Wayne, IN	-	0.727		-		-		-		-	0.000	0.727	-
PNT Customer Test	MIPR	ATEC WSMR : WSMR, NM	-	0.897		-		-		-		-	0.000	0.897	-
PNT Pseudolite test	MIPR	ATEC WSMR : WSMR, NM	-	0.217		-		-		-		-	0.000	0.217	-
PNT JWA 18.1/19.1	MIPR	ATEC : OCONUS	-	0.510		-		-		-		-	0.000	0.510	-
Subtotal			-	5.751		-		-		-		-	0.000	5.751	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			27.665	58.007		0.000		-		-		-	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) FG7 / <i>Emerging Technology Initiatives</i>	

Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Technology Evaluation FY17																												
Technology Evaluation FY18																												
Prototype Procurement FY18																												
Technology Evaluation FY19																												
Prototype Procurement FY19																												
RCO EW Phase I YPG C&L Test																												
RCO EW Phase I Deployment																												
RCO EW Phase II Development																												
RCO PNT Sensor Development (fixed and mobile)																												
RCO PNT Test Planning																												
RCO PNT NRE and Integration on Stryker Platforms																												
RCO PNT NRE and Integration on Heavy Platforms																												
RCO PNT Laboratory Testing of PNT Systems																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army																	Date: March 2019											
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											
Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
RCO PNT Pseudolite Risk Reduction Testing		■																										
RCO PNT Safety Release for Customer Test			■																									
RCO PNT Customer Test				■																								
RCO PNT C&L and Safety Confirmation								▲1																				
RCO PNT Deployment Decision Package								▲2																				
RCO PNT BOD Deployment Decision																												
RCO PNT BOD Deployment Decision								▲3																				
RCO PNT Purchase A Kits																												
RCO PNT Sensor Purchase/Site Surveys																												
RCO PNT Ship A kits to USAREUR																												
RCO Begin Deployment to USAREUR Units																												
RCO OSD Effort Initiation & Engineer Analysis																												
RCO OSD Operational Assessment FY19																												
RCO OSD Operational Assessment FY20																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army																Date: March 2019												
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										
Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
RCO OSD Residual OA Equipment Maintenance FY21																												
RCO OSD Residual OA Equipment Maintenance FY22																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) FG7 / <i>Emerging Technology Initiatives</i>	

Schedule Details

Events	Start		End	
	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
RCO EW Phase I Development	2	2017	4	2017
RCO EW Phase I Lab Based Risk Reduction	2	2017	3	2017
RCO EW Phase I NIE 17.2 NET	3	2017	3	2017
RCO EW Phase I NIE 17.2 VALEX	3	2017	3	2017
RCO EW Phase I NIE 17.2 EW Dry Run	4	2017	4	2017
RCO EW Saber Guardian 17	4	2017	4	2017
RCO EW Phase I NIE 17.2 EW Assessment	4	2017	4	2017
RCO EW Phase I YPG C&L Test	4	2017	1	2018
RCO EW Phase I Deployment	2	2018	2	2018
RCO EW Phase II Development	1	2018	4	2018
RCO PNT Sensor Development (fixed and mobile)	4	2017	3	2018
RCO PNT Test Planning	4	2017	2	2018
RCO PNT NRE and Integration on Stryker Platforms	4	2017	3	2018
RCO PNT NRE and Integration on Heavy Platforms	1	2018	3	2018
RCO PNT Laboratory Testing of PNT Systems	3	2017	2	2018
RCO PNT Pseudolite Risk Reduction Testing	2	2018	2	2018

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019	
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	
	Start		End	
Events	Quarter	Year	Quarter	Year
RCO PNT Safety Release for Customer Test	2	2018	2	2018
RCO PNT Customer Test	3	2018	3	2018
RCO PNT C&L and Safety Confirmation	3	2018	3	2018
RCO PNT Deployment Decision Package	3	2018	3	2018
RCO PNT BOD Deployment Decision	4	2018	4	2018
RCO PNT Purchase A Kits	3	2018	2	2019
RCO PNT Sensor Purchase/Site Surveys	1	2019	2	2019
RCO PNT Ship A kits to USAREUR	1	2019	3	2019
RCO Begin Deployment to USAREUR Units	4	2019	4	2019
RCO OSD Effort Initiation & Engineer Analysis	1	2018	4	2018
RCO OSD Operational Assessment FY19	1	2019	4	2019
RCO OSD Operational Assessment FY20	1	2020	4	2020
RCO OSD Residual OA Equipment Maintenance FY21	1	2021	4	2021
RCO OSD Residual OA Equipment Maintenance FY22	1	2022	4	2022