Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army											Date: March 2023	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604818A *I Army Tactical Command & Control Hardware & Software*							
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	-	146.291	131.190	168.574	-	168.574	103.953	99.482	93.877	91.739	Continuing	Continuing
323: *Common Hardware Systems*	-	4.424	5.121	4.630	-	4.630	5.026	5.033	5.086	5.143	Continuing	Continuing
C29: *Centralized Technical Support Facility (CTSF)*	-	7.077	32.248	4.380	-	4.380	4.484	4.591	4.696	4.748	Continuing	Continuing
C34: *Army Tac C2 Sys Eng*	-	9.061	11.866	11.141	-	11.141	11.448	11.461	11.584	11.713	Continuing	Continuing
DD1: *Unified Network Technology Trans & Integ (UNTTI)*	-	-	-	7.898	-	7.898	4.455	4.549	4.398	4.237	0.000	25.537
EJ4: *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	-	33.835	27.995	45.489	-	45.489	27.707	27.740	28.036	28.348	Continuing	Continuing
EJ5: *MOUNTED COMPUTING ENVIRONMENT (MCE)*	-	21.076	-	-	-	-	-	-	-	-	Continuing	Continuing
EJ6: *TACTICAL ENHANCEMENT*	-	7.573	-	9.040	-	9.040	-	-	-	-	0.000	16.613
EK9: *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	-	3.243	3.400	49.577	-	49.577	25.357	26.111	26.651	27.326	0.000	161.665
EQ8: *Mobile/Handheld Computing Environment (M/HHCE)*	-	4.919	5.298	7.549	-	7.549	6.284	5.291	5.347	5.408	Continuing	Continuing
ER9: *Expeditionary Army Command Post*	-	46.080	31.463	28.870	-	28.870	19.192	14.706	8.079	4.816	0.000	153.206
EW3: *Unit Task Reorganization (UTR) Development*	-	9.003	13.799	-	-	-	-	-	-	-	Continuing	Continuing

Note

Project EW3, Unit Task Reorganization (UTR) funding has been re-aligned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604818A *I Army Tactical Command & Control Hardware & Software*

A. Mission Description and Budget Item Justification

A portion of this funding line is directly aligned to the Army Network Modernization Priority. This funding line supports the Army Network Modernization Strategy LOE 1, Unified Network, LOE 2 - Common Operating Environment and LOE 4 - Command posts.

Project 323, Common Hardware Systems (CHS) is an ACAT III program that is a key enabler of the Army Modernization Priorities in support of the Army's Network Modernization Strategy Lines of Effort: (1) Unified Network Transport, (2) Common Operating Environment, (3) Interoperability, and (4) Command Post Mobility and Survivability. CHS is a mandated Army Strategic Source, as annotated in AR 25-1 that acquires and sustains highly flexible, cost-effective, and simplified non-developmental solutions that integrate the latest and emerging commercial information technology onto the Converged Mission Command Network. Efforts are aligned to support the Network Cross-Functional Team (CFT) capability set approach to achieve network modernization strategy goals. This funding line also supports network solution procurement and sustainment for U.S. Army Reserves, U.S. Army National Guard, U.S. Navy, U.S. Air Force, U.S. Marine Corps, and other Federal agencies. The CHS-5 contract averages approximately 315 contract actions annually.

Project C29, the Central Technical Support Facility (CTSF), is the Army's single strategic facility responsible for executing Army Interoperability Certification (AIC) system of system verification/validation checkout, testing, and configuration management for the Army's LandWarNet Baseline. The Centralized Technical Support Facility (CTSF) funding line supports the Army's Network Modernization Strategy Line of Effort LOE 1B Network Enabling Functions.

Project C34, the Army Tac C2 Sys Eng project funds the PEO Command, Control, Communications-Tactical (PEO C3T) System-of-Systems engineering, Enterprise and Integration efforts. The system engineering efforts are to facilitate overall network interoperability of all the various programs that must be able to seamlessly connect together while addressing their individual distinct requirements. Efforts address continuing evolution of the network within the PEO C3T portfolio of technology across capability enhancement packages, in line with the Army's capability set strategy, to deliver efficient and effective cross-domain technical solution.

Project DD1, Unified Network Technology Transition and Integration (UNTTI) is an RDT&E initiative that enables transport agnostic, high-capacity and resilient tactical communications for expeditionary operations. UNTTI will transition new and improved capabilities with reduced Size, Weight, and Power, while increasing throughput, providing network resiliency through path diversity, and Low Probability of Intercept/Low Probability of Detection. This funding significantly increases the likelihood of successfully transitioning S&T funded projects into the tactical network baseline, by further integrating and testing system prototypes that have achieved Technical Readiness Level (TRL) 7 through prior 6.4 RDT&E funding. This ensures that S&T delivers a high return on investment by inserting enhanced capabilities in accordance with capability set fieldings. In addition, UNTTI resources validation and test efforts, which improve reliability, maintainability and supportability of Tactical Network equipped units. These improvements avoid future costs by mitigating single point failures and hardening the network which ultimately increases network resiliency and unit availability for contingency operations. This funding line is directly aligned to the Army's modernization efforts. Unified Network Technology Transition and Integration (UNTTI) is directly aligned to the Army Network Modernization Strategy Line of Effort 1 (LOE 1) Unified Network and LOE 4, Command Post Mobility and Survivability. These efforts support system development and demonstration, aimed at integration and testing to validate system prototypes meet requirements.

Project EJ4, the Command Post Computing Environment (CPCE) implements an integrated, interoperable, cyber-secure, software infrastructure that serves as the host for a unified set of multiple warfighting functional applications within the command post at echelons Battalion to Army Service Component Command (ASCC); eliminating "stove-piped" legacy systems, duplicative or redundant implementations, simplifying future application development efforts, and enhancing interoperability and data

sharing across multiple echelons. CPCE software infrastructure and applications reside on the Tactical Services Infrastructure (TSI) hardware and BCCS/TSI servers previously fielded under the TMC/MCS program of record. CPCE/TSI provides the software and hardware infrastructure to host capabilities, such as movement and maneuver applications, network enabling tools (i.e. Cyber Situational Understanding and Tactical Defensive Cyber Operation Infrastructure), collaboration tools (Wave and XMPP Chat Servers), and warfighting function applications. This software infrastructure provides the Army's Common Operating Picture (COP) solution, enabling interoperability between command posts, mounted platforms, and dismounted handheld devices while supporting collaboration with Joint and Unified Action partners. CPCE provides common look and feel (user interface), common data strategy, interoperable tactical messaging/ chat, and essential warfighting capabilities.

Project EJ5, the Mounted Computing Environment (MCE), is one of the six computing environments (CEs) formalized by the AAE under the Common Operating Environment (COE) initiative. MCE is now called, Mounted Mission Command - Software (MMC-S), an ACAT II program, after a successful Materiel Development Decision (MDD) briefing in Feb. 2020. MMC-S standardizes end-user environments and enables streamlined deployment of new warfighting applications while leveraging existing hardware under the Joint Battle Command - Platform program. Requirements for MMC-S are established in the AROC approved COE Information Systems Initial Capability Document (IS ICD) and the approved Mounted Computing Environment Requirements Definition Package (RDP). The MMC-S will provide incremental improvements with additional application capabilities over time, and will be interoperable with Command Post and Mobile/Handheld systems.

Project EJ6, This funding line is directly aligned to the Army Network Modernization Priority. Efforts are aligned to support the Army's capability set approach to achieve the network modernization strategy.

TROPO: Tactical Enhancement supports the evaluation and testing requirements for Troposcatter Transmission (TROPO) capabilities procured and fielded under the Signal Modernization (SIGMOD) funding line, B00010. TROPO will provide redundancy communications in a Satellite denied environment by providing Beyond Line of Sight (BLOS) capability over longer ranges and at higher throughput than the current BLOS System. TROPO extends the network by utilizing a significantly reduced SWaP radio verses the current system. TROPO will enable Army units to reduce reliance on costly satellite bandwidth.

COMMAND POST NETWORKING: Enables Command Post networking capabilities by providing communications solutions to enable a more survivable Command Post against near peer advisories. The solutions will utilize advanced waveform and antenna improvements to decrease radio frequency detection and interception in the battlefield and will be integrated onto the appropriate platforms to increase Command Post survivability.
STS: Tactical Enhancement supports the evaluation and testing requirements for Sustainment Transport System (STS) capabilities procured and fielded under the CSS Communications funding line, BD3501. STS is a data transport capability through satellite communications (SATCOM) and an integrated component of the Unified Network (UN) providing unclassified communications to US Army sustainment units in their support to the warfighter. STS provides network connectivity and enables a satellite communications pathway for logistics, financial management, personnel and health service support information to be exchanged on the battlefield across multiple echelons.

Project EK9, Tactical Network Operations Management (TNOM) supports development and testing of the Unified Network Operations (UNO). Unified Network Operations (UNO) is a software-centric suite of Command and Control capabilities, designed to consolidate existing Network Operations (NetOps) tools into a simplified user-friendly application for planning, managing, monitoring, configuring, and securing the Unified Network.

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604818A *I Army Tactical Command & Control Hardware & Software*

The UNO Middle Tier Acquisition (MTA) Rapid Prototyping (RP) effort provides initial development and testing of UNO prototype capabilities, through Development Operations (DEVOPS), leveraging Soldier Touch Points (STPs) to obtain user feedback to improve the UNO capabilities. UNO MTA RP efforts are authorized, under the Army Acquisition Executive (AAE) Acquisition Decision Memorandum (ADM) signed 14 May 2019, with a total cost of $85 million RDT&E funds from FY 2019 - FY 2024, for which authority was approved.

On 28 June 2021, Army Futures Command (AFC) Commanding General (CG) signed a memorandum approving the UNO Information Systems - Initial Capabilities Document (IS-ICD), to develop a seamless end-to-end Unified Network from enterprise to tactical echelons enabling all warfighting functions. UNO capability will support achieving a unified network through the standardization of multiple tools across Tactical Networks and systems into an integrated, simple application.

Project EQ8, Mobile/Handheld Computing Environment (M/HHCE), is one of the six computing environments (CEs) formalized by the Army Acquisition Executive (AAE) under the Common Operating Environment (COE) initiative and supports the Nett Warrior (NW) also known as the Ground Soldier Systems (GSS) program. The program leverages commercial smart devices and secure Army tactical radios, Commercial 4G/LTE/WIFI and cloud-based infrastructure to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations. The NW system provides leaders electronic real-time information on friendly positions; information about enemy activity and movement; navigational data and map imagery; a collaborative planning tool; and other mission related graphics which effectively puts the power of the entire Army tactical network in the hands of the dismounted leader. The NW hardware is the computational platform that other M/HHCE systems run their applications. The M/HHCE will provide incremental improvements with additional application capabilities over time, and will be interoperable with Command Post CE and Mounted CE systems.

Project ER9, Command Post Integrated Infrastructure (CPI2), fields mobile Command Post nodes by integrating mission command solutions into vehicle platforms and mounted shelter systems to enhance the survivability and mobility of command post formations. CPI2 will replace selected elements of the legacy command post to provide improved expeditionary capability, survivability, agility, and scalability for command post formations at all echelons. By integrating mission command warfighting functions on to vehicle platforms, a dispersed command post construct will enable the battle staff to blend in with the overall maneuver formation while giving the commander the ability to synchronize the close fight on the move.

Project EW3, Unit Task Reorganization (UTR) funding line supports the Army Network Plan Framework objective to deliver a Standards Based Network Architecture. This will enable modernizing the Mission Command Network through the coordination of a common set of network operations (NetOps) tools and infrastructure development supporting the unit communication staff's ability to conduct Network Planning, Network Provisioning, and Network Management, aligning with the Army's plan for a unified network. UTR provides an integrated planning tool suite; tools and technologies to provision and automate delivery of configurations; and replace stove-piped management systems with integrated tools providing detailed views of the network and its components. The UTR funding line, in accordance with the National Defense Authorization Act (NDAA) policy for MTA funding, is leveraged by the Unified Network Operations (UNO) MTA Rapid Prototyping program to achieve its required funding levels.

The UTR funding has been re-aligned to the TNOM 654818 / EK9 funding line beginning in FY 2024.

The total cost of the UNO Middle Tier of Acquisition effort is $85 million RDT&E from FY19 to FY24. The UNO is fully funded across the Future Years Defense Program.

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604818A *I Army Tactical Command & Control Hardware & Software*

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	155.017	111.690	111.612	-	111.612
Current President's Budget	146.291	131.190	168.574	-	168.574
Total Adjustments	-8.726	19.500	56.962	-	56.962
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.291			
• Congressional Rescissions	-	-			
• Congressional Adds	-	23.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-8.726	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	56.962	-	56.962
• FFRDC Transfer	-	-0.209	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: C29: *Centralized Technical Support Facility (CTSF)*		
Congressional Add: *Red Team Automation/Zero Trust Capabilities*	-	23.000
Congressional Add Subtotals for Project: C29	-	23.000
Congressional Add Totals for all Projects	-	23.000

Change Summary Explanation

Project EK9, Tactical Network Operations Management (TNOM) funding increased by $35.749 million to support Unified Network Operations (UNO) Information Systems - Initial Capabilities Document (IS-ICD) requirements for product development of key components of the Unified Network for Department of Defense Information Networks (DODIN) operations for tactical echelons. Project EJ4, Command Post Computing Environment (CPCE) funding increased by $17.316 million for Tactical Data Fabric, Cloud Native environment migration and integration activities.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army											Date: March 2023	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) 323 / *Common Hardware Systems*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
323: *Common Hardware Systems*	-	4.424	5.121	4.630	-	4.630	5.026	5.033	5.086	5.143	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Common Hardware Systems (CHS) is an inactive ACAT III program that is a key enabler of the Army Modernization Priorities in support of the Army's Network Modernization Strategy Lines of Effort: (1) Unified Network Transport, (2) Common Operating Environment, (3) Interoperability, and (4) Command Post Mobility and Survivability. CHS is a mandated Army Strategic Source, as annotated in Army Regulation (AR) 25-1 Army Information Technology (IT) that acquires and sustains highly flexible, cost-effective, and simplified non-developmental solutions that integrate the latest and emerging commercial IT onto the Converged Mission Command Network. Efforts are aligned to support the Network Cross-Functional Team (CFT) capability set approach to achieve network modernization strategy goals. This funding line also supports network solution procurement and sustainment for U.S. Army Reserves, U.S. Army National Guard, U.S. Navy, U.S. Air Force, U.S. Marine Corps, and other Federal agencies. The CHS-5 contract averages approximately 315 contract actions annually.

CHS provides technical support, warranty support, system engineering and design, and end-of-life and configuration management services to ensure interoperability and integration of hardware throughout the computing infrastructure. CHS continuously analyzes and tracks hardware from cradle to grave; from emerging technology until end of life. The program conducts hardware evaluations that facilitate and simplify the selection of common hardware solutions across numerous Army programs, agencies, Joint Services, and other Federal Agencies including: Mission Command; Tactical Network; Tactical Radios; Intelligence Systems and Analytics; Aviation Systems; Counter-Rocket, Artillery, Mortar (C-RAM); Communication Electronics Command; Combat Capabilities Development Command (DEVCOM); Army National Guard and Reserves; Navy; Air Force; Marines; the Federal Bureau of Investigation; among others. CHS rapidly procures common hardware configurations across the Capabilities Sets, the sustainment community, and tactical programs that enable the continuous modernization in support of all four Army Network Modernization Lines of Effort and Network CFT requirements. CHS logistical services include the ability to add worldwide, 72-hour turn-around repair through strategically located support centers for tactical military units. These support centers provide tailorable supply chain and cybersecurity measures, customizable warranty management, maintenance and failure rate reporting, and technical support services to support specific Army program requirements.

CHS is a model for modern acquisition strategy that strengthens the U.S. cybersecurity supply chain and manages risk by providing hardware solutions including servers, storage, clients, networking devices, tactical radios, ruggedized platforms, hand-held end devices, operational transit cases, installation kits, and peripheral devices procured from a mix of small and large businesses. CHS partners with the CECOM Integrated Logistics Support Center (ILSC) to develop a model for sustaining Commercial Off The Shelf (COTS) IT using the Standard Army Supply System.

CHS supports Better Buying Power (BBP) initiatives by through volume discounting, economies of scale, the elimination of duplication of effort, reduced barriers to entry, price breaks, streamlined processes, reduced cycle times, and centralized contracting.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Acquisition Support ***Description:*** Funding is provided for the following effort. ***FY 2023 Plans:*** Will continue acquisition support for CHS and customer programs. CHS rapidly procures common hardware configurations across all four Network Modernization Lines of Effort, Capability Sets, and Network Cross Functional Team (CFT). Supports tactical programs that enable the continuous modernization of a unified network requirements, the sustainment community, and DoD and Federal Government customers. PMO costs will be covered by OMA funding. ***FY 2024 Plans:*** Acquisition support for CHS and customer programs. CHS rapidly procures common hardware configurations across all four Network Modernization Lines of Effort, Capability Sets, and Network Cross Functional Team (CFT). Supports tactical/operational programs that enable the continuous modernization of a unified network requirements, the sustainment community, and DoD and Federal Government customers. PMO costs will be covered by OMA funding. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding remains consistent to meet Acquisition Support requirements.	2.229	2.809	2.885
Title: Technical and Test Support ***Description:*** Funding is provided for the following effort. ***FY 2023 Plans:*** CHS provides technical support, environmental and survivability testing, system design, end of life/configuration management, and strengthens cyber security/supply chain management across Army tactical programs to ensure interoperability and integration of hardware throughout the computing infrastructure. CHS conducts hardware evaluations that facilitate and simplify the selection of common hardware solutions across numerous Army programs and agencies. ***FY 2024 Plans:*** CHS provides technical support, environmental and survivability testing, system engineering and design, end of life/configuration management, and strengthens cyber security/supply chain management across Army tactical/operational programs to ensure interoperability and integration of hardware throughout the computing infrastructure. CHS conducts hardware evaluations that facilitate and simplify the selection of common hardware solutions across numerous Army programs and agencies. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Delta decrease is based on forecasted reduction in activities in this element.	1.607	1.513	1.120
Title: Logistical Service Support	0.386	0.408	0.417

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Description: Funding is provided for the following effort. ***FY 2023 Plans:*** CHS logistical services include worldwide support with a 72-hour turnaround for repairs, tailorable supply chain and cybersecurity measures, manages customizable warranty, maintenance and failure rate reporting, and technical support services to support specific Army program requirements. ***FY 2024 Plans:*** CHS logistical services include worldwide support with a 72-hour turnaround for repairs, tailorable supply chain and cybersecurity measures, manages customizable warranty, maintenance and failure rate reporting, and technical support services to support specific Army program requirements. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding remains consistent to meet Logistical Service Support.			
Title: Contract Support Services ***Description:*** Funding is provided for the following effort. ***FY 2023 Plans:*** Contract Support Services are required to provide continuing expedited acquisition support for customer procurements. ***FY 2024 Plans:*** Contract Support Services are required to provide continuing expedited acquisition support for customer procurements. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding remains consistent to meet Contract Support Services.	0.202	0.204	0.208
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638. ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC §638. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC §638.	-	0.187	-
Accomplishments/Planned Programs Subtotals	4.424	5.121	4.630

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

CHS is currently executing an approved acquisition strategy to facilitate the procurement of commercial IT through a single step, full and open competition contract. The fifth generation of the contract (CHS-5) was awarded on 23 AUG 2018; 5 years/IDIQ. A single prime vendor was selected as the program integrator. The CHS-5 contract provides seamless, rapid, and consolidated procurement of commercial IT, customizable sustainment strategies, non-personal services, and continuous technology upgrades to support tactical/operational programs fielding schedules, configuration management, and ruggedization.

(CHS-6) request for proposal (RFP) was released on 7 OCT 2022 and is anticipated to be awarded by 1QFY24. Extensive market research was conducted to identify the acquisition strategy for this effort. The CHS PMO held frequent and open discussions with industry to ensure the requirements are clearly understood and feedback from hardware developers and manufacturers has been taken into consideration to maximize competition. The CHS PMO shaped the CHS-6 contract to allow all Federal Agencies with tactical requirements to achieve their missions and strategic initiatives by providing a rapid and streamlined process and access to critical Commercial Information Technology.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) 323 / *Common Hardware Systems*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.187	Apr 2023	-		-		-	0.000	0.187	-
		Subtotal	-	-		0.187		-		-		-	0.000	0.187	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Support	C/FP	Various : Various	11.089	2.229	Dec 2021	2.809	Dec 2022	2.885	Dec 2023	-		2.885	Continuing	Continuing	Continuing
Logistical Service Support	C/FP	Various : Various	1.760	0.386	Dec 2021	0.408	Dec 2022	0.417	Dec 2023	-		0.417	Continuing	Continuing	Continuing
Technical & Test Support	C/FP	Various : Various	6.362	1.607	Dec 2021	1.513	Dec 2022	1.120	Dec 2023	-		1.120	Continuing	Continuing	Continuing
		Subtotal	19.211	4.222		4.730		4.422		-		4.422	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Support Services	SS/CR	APG, MD : APG, MD	0.200	0.202	Dec 2021	0.204	Dec 2022	0.208	Dec 2023	-		0.208	Continuing	Continuing	Continuing
		Subtotal	0.200	0.202		0.204		0.208		-		0.208	Continuing	Continuing	N/A

	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	19.411	4.424		5.121		4.630		-		4.630	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

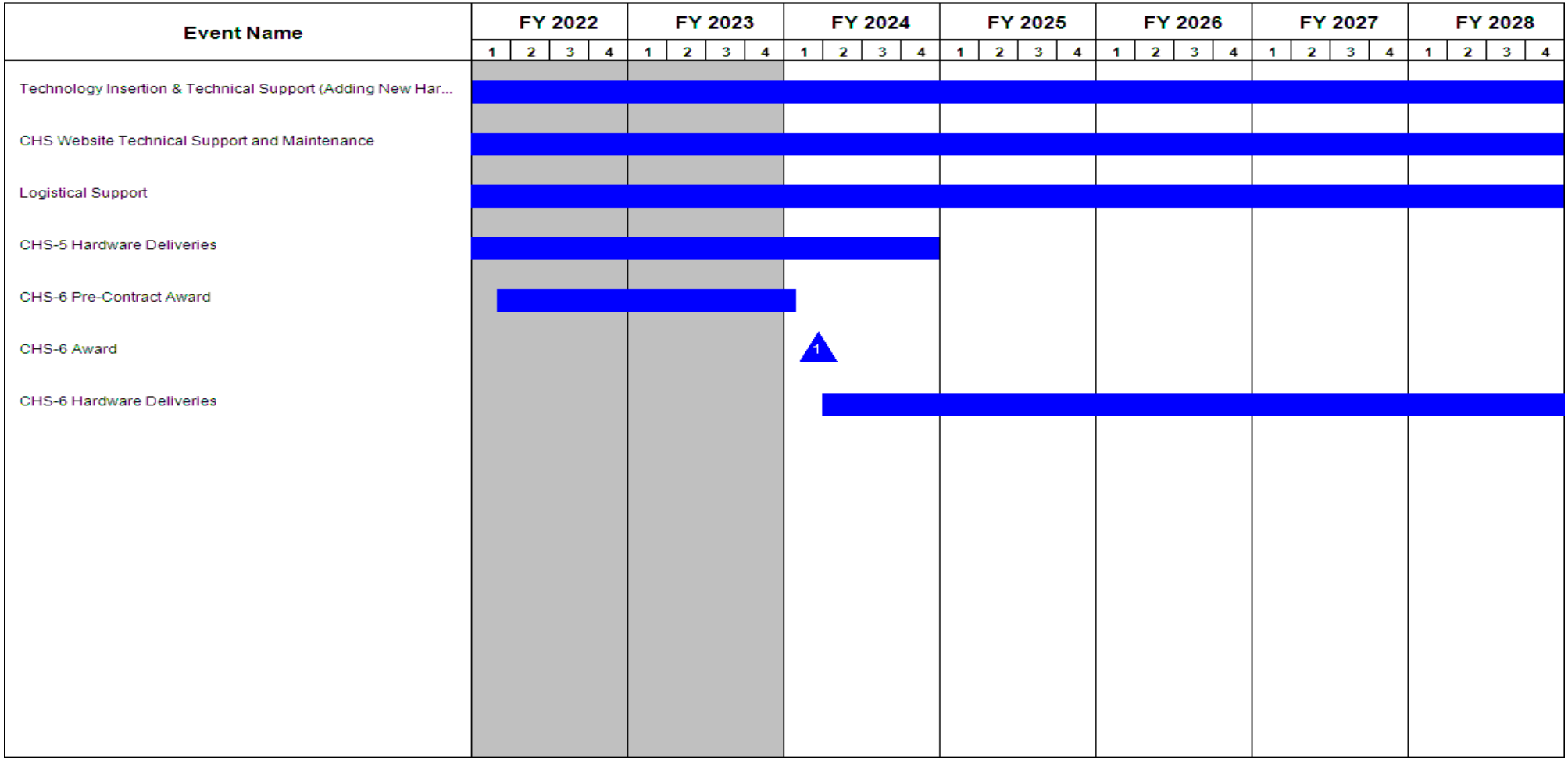


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Technology Insertion & Technical Support (Adding New Hardware to Contract)	1	2007	4	2028
CHS Website Technical Support and Maintenance	4	2018	4	2028
Logistical Support	4	2018	4	2028
CHS-5 Hardware Deliveries	4	2018	4	2024
CHS-6 Pre-Contract Award	1	2020	1	2024
CHS-6 Award	1	2024	1	2024
CHS-6 Hardware Deliveries	2	2024	1	2034

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C29 / *Centralized Technical Support Facility (CTSF)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
C29: *Centralized Technical Support Facility (CTSF)*	-	7.077	32.248	4.380	-	4.380	4.484	4.591	4.696	4.748	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project C29, The Centralized Technical Support Facility (CTSF): The CTSF is the Army's premier test and certification facility for System of Systems interoperability, functioning as CIO/G6's designated independent test agent and Land/WarNet/Mission Command (LWN/MC) configuration manager. The Central Technical Support Facility's (CTSF) directed mission is to perform Army Interoperability Certification (AIC) testing and configuration management for all 23 operational through tactical level Command, Computing, Control, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) systems, Mission and Space systems, Aviation systems and other individual, family, and system of systems, applications, and hardware prior to release to the field. The CTSF accomplishes this through the enforcement of a standards based architecture while supporting the development and implementation of an integrated computing infrastructure and a converged network. The CTSF provides validated test data to the Department of the Army and Joint agencies to accredit interoperability certifications. The distributed test environment of the CTSF is accomplished through the Federation of Net-centric Sites (FaNS) construct. This FaNS construct addresses distributed integration development and testing using the core infrastructure of the CTSF to harness Army and Joint expertise/resources. Through these federated resources, the CTSF executes or supports interoperability development, integration and certification testing of the systems and system of systems in the Warfighter Mission Area, to include Network Evaluation spinouts, as they become part of the Army's LandWarNet. The cited work is consistent with Strategic Planning Guidance and the Army Modernization and Strategy Plan.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Army Interoperability Certification (AIC) Testing	1.888	3.232	1.873
Description: Conduct Army Interoperability Certification (AIC), planning/coordination/scheduling/ and reporting of Common Operating Environment (COE) and software block testing (local and distributed). Additionally, provide stakeholders data collection/data analysis/data dissemination/simulation/stimulation verification/validation in support of Army geospatial interoperability certification, system of system cybersecurity posture assessment and individual system cybersecurity policy adjustment. Manage the set-up, configuration, integration, operations and maintenance of the LandWarNet/Mission Command (LWN/MC) systems within the CTSF test environments. Function as the HQDA G-6's Independent Test Agent for Program Managers of LWN/MC systems that have an Acquisition Life Cycle requirement for testing interoperability of software and associated hardware prior to fielding to the Warfighter. Act as the central control node to synchronize the HQDA G-6 accredited Federation of Net-centric Sites (FaNS) distributed AIC testing environment. Report the results of Army Interoperability Certification tests to the HQDA G-6, PM, TRADOC and AFC communities.			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Continue SWB11-12 test planning, test case development, test environment architecture set-up, for interoperability testing, Geospatial Information Systems (GIS) interoperability assessment, cybersecurity posture adjustment and assessment activities for the systems that comprise the Army's tactical software baselines. Conduct COE v3.0 planning, test case development and architecture set-up to support the technical standards update timelines for the Army's tactical software baseline. Conduct interoperability testing for the SWB11-12 and COE v3.0 systems that comprise the LWN/MC baseline to ensure the tactical integrated computing infrastructure is interoperable in a System of Systems (SoS) environment and to enable the HQDA G-6 to enforce a standards based architecture. Continue the virtualization build out and scale up of the test environment to support AIC testing. Partner with ATEC and AFC to leverage the CTSF assets in support of PMs' Operational Test activities. ***FY 2024 Plans:*** Continue SWB11-12 test planning, test case development, test environment architecture set-up, for interoperability testing, Geospatial Information Systems (GIS) interoperability assessment, cybersecurity posture adjustment and assessment activities for the systems that comprise the Army's tactical software baselines. Conduct COE v3.0 planning, test case development and architecture set-up to support the technical standards update timelines for the Army's tactical software baseline. Conduct interoperability testing for the SWB11-12 and COE v3.0 systems that comprise the LWN/MC baseline to ensure the tactical integrated computing infrastructure is interoperable in a System of Systems (SoS) environment and to enable the HQDA G-6 to enforce a standards based architecture. Continue the virtualization build out and scale up of the test environment to support AIC testing. Partner with ATEC and AFC to leverage the CTSF assets in support of PMs' Operational Test activities. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease due to efficiencies related to modernization effort and reduction in requirement to conduct two simultaneous interoperability tests for the SWB11-12 and COE v3.0 systems that comprise the LWN/MC baseline to ensure the tactical integrated computing infrastructure is interoperable in a System of Systems (SoS) environment.			
Title: Engineering Services ***Description:*** Provide network engineering support to establish and maintain tactical architectures on the CTSF test floors and to deploying/fielded units at training centers around the world (JRTC, NTC, JMRC). System engineering support provides hardware virtualization, Army End Point Security System (AESS) support, system validation and integration support to numerous PMs on the integration and risk reduction labs, and assists Army programs with interoperability assessments and AIC rehearsal. Modify and merge army data products for CTSF test architectures. Continuously seek emerging markets. Develop/Maintain Applications for CTSF Configuration Tracking System Version 4 (CMTSv4). ***FY 2023 Plans:*** Provide Network support for integration and test floors, network support to fielded units, and systems engineering and analysis support to system of systems integration activities. Enhance the Security posture of the CTSF by ensuring the latest Information	0.195	0.199	0.203

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Assurance Vulnerability Alerts (IAVAs) and Security Technical Implementation Guides (STIGs) are implemented as required by Risk Management Framework (RMF). Integrate and implement Army End Point Security System (AESS) technology, assist PMs in the development of AESS policies. Plan and conduct engineering evaluations for AIC testing and data collection in the Joint Warfighter Assessment (JWA)/Capability Integration Evaluation (CIE) to leverage the operational environment and JWA/ CIE resources. Work with Network Cross Functional Team on Network modernization and Integrated Tactical Network (ITN) design and testing. Assist integration and test architectures to include Program of Record (POR) and non-POR Soldier radio waveforms to provide PMs and Material Developers testing in realistic environments. Support Army Test and Evaluation Command (ATEC) and Army Futures Command interoperability assessments of Cross-Functional Team (CFT) solutions. Continue efforts to implement an AIC Secret Releasable test environment network that integrates Army and the Unified Action Partners (UAP). ***FY 2024 Plans:*** Continue to provide Network support for integration and test floors, network support to fielded units, and systems engineering and analysis support to system of systems integration activities. Enhance the Security posture of the CTSF by ensuring the latest Information Assurance Vulnerability Alerts (IAVAs) and Security Technical Implementation Guides (STIGs) are implemented as required by Risk Management Framework (RMF). Integrate and implement Army End Point Security System (AESS) technology, assist PMs in the development of AESS policies. Plan and conduct engineering evaluations for AIC testing and data collection in the Joint Warfighter Assessment (JWA)/Capability Integration Evaluation (CIE) to leverage the operational environment and JWA/ CIE resources. Work with Network Cross Functional Team on Network modernization and Integrated Tactical Network (ITN) design and testing. Assist integration and test architectures to include Program of Record (POR) and non-POR Soldier radio waveforms to provide PMs and Material Developers testing in realistic environments. Support Army Test and Evaluation Command (ATEC) and Army Futures Command interoperability assessments of Cross-Functional Team (CFT) solutions. Continue efforts to implement an AIC Secret Releasable test environment network that integrates Army and the Unified Action Partners (UAP). ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase reflects planned lifecycle effort.			
Title: Configuration Management ***Description:*** As the CTSF Configuration Management Office, provide CM functional and physical configuration management and change management to the CTSF Army Interoperability Certification test floor environment. Additionally, as the Army Configuration Management Office (ACMO), establish and maintain oversight control of the Army Master Library for the Army Interoperability Certified Fielded Baseline (AICFB). Archive system software and data products, correlated with their associated documentation, for the Army LandWarNet Mission Command Baseline (ALWNMCB), a subset of the AICFB. Establish and maintain the configuration and change management to the AICFB and the ALWNMCB for Lifecycle Software Management (LCSM). Provide support to the Army Staff (ARSTAF), Material Developers (MATDEV), Project Managers (PM), and System	1.432	1.858	1.910

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Owners (SO) through the orderly management of product configuration information and product change management (ChM), which enables capability revisions, improved reliability and maintainability, and extended life-cycle. Maintain and improve the Configuration Management Tracking System version 3 (CMTSIII), the Army's authoritative database management system (DBMS) for configuration management (CM) of the systems comprising Coalition Interoperability Assurance and Validation (CIAV), and the Warfighter Mission and Business Mission Areas of the Army Information Technology (IT) portfolio. Assist the HQDA G-6 conduct accreditation inspections and training for Federation of Net-centric Sites (FaNS) locations. ***FY 2023 Plans:*** Provide CM functional and physical configuration management and change management to the CTSF Army Interoperability Certification test floor environment. Provide CM functional and physical configuration management and change management to the AICFB, to include archiving the required system software, data products and documentation, while correlating the relevant data within the CMTSIII DBMS for visibility to users Army wide. Provide baseline reconciliation to the four quarterly HQDA G6 AICFB reports, identifying to commanders and their G-3/G-6 staff the Army's AIC certified, Interoperability Capability and Limitations assessed, AIC waivered, and AIC exempted system software that is authorized to connect to the Army's network. Assist the HQDA G-6 AICFB in conducting accreditation inspections and training for Federation of Net-centric Sites (FaNS) locations. ***FY 2024 Plans:*** Continue to provide CM functional and physical configuration management and change management to the CTSF Army Interoperability Certification test floor environment. Provide CM functional and physical configuration management and change management to the AICFB, to include archiving the required system software, data products and documentation, while correlating the relevant data within the CMTSIII DBMS for visibility to users Army wide. Provide baseline reconciliation to the four quarterly HQDA G6 AICFB reports, identifying to commanders and their G-3/G-6 staff the Army's AIC certified, Interoperability Capability and Limitations assessed, AIC waivered, and AIC exempted system software that is authorized to connect to the Army's network. Assist the HQDA G-6 AICFB in conducting accreditation inspections and training for Federation of Net-centric Sites (FaNS) locations. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase reflects planned lifecycle effort.			
Title: Management Operations/Program Office ***Description:*** Provide management operations consisting of planning, programming and executing funds; planning and programming for required personnel; planning, programming and executing contracts supporting AIC testing processes; identifying reimbursable tests and collecting/allocating appropriate funds; planning and programming logistics activities, managing/controlling/documenting physical assets and inventories; and perform oversight and coordination of physical security with hosting installation.	0.406	0.387	0.394

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
FY 2023 Plans: Program and execute funding. Plan and program manpower, identify contracting requirements and develop strategy for implementation in conjunction with CECOM Acquisition Center. Track testing schedule, prepare/coordinate/track customer funding for AIC testing activities and infrastructure support. Continue to provide field support coordination for unit training and exercises upon request. Maintain existing infrastructure; continue to enhance physical security, access control, force protection, Continuity Of Operations (COOP) and Emergency Action Plan (EAP) activities and exercises. Continue inventory accountability programs and asset control. ***FY 2024 Plans:*** Continuation of programming and execution of funding. Plan and program manpower, identify contracting requirements and develop strategy for implementation in conjunction with CECOM Acquisition Center. Track testing schedule, prepare/coordinate/ track customer funding for AIC testing activities and infrastructure support. Continue to provide field support coordination for unit training and exercises upon request. Maintain existing infrastructure; continue to enhance physical security, access control, force protection, Continuity Of Operations (COOP) and Emergency Action Plan (EAP) activities and exercises. Continue inventory accountability programs and asset control. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase reflects planned lifecycle effort.			
Title: Modernization ***Description:*** Technical modernization FY22-23 effort for Army Interoperability Certification (AIC) to enhance CTSF testing capabilities. Estimated cost of modernization is approximately $6M in investment with virtualization efforts and test automation. Funding provided for hardware & software integration for virtualization and automation, software licensing, and labor and other supporting integration efforts. ***FY 2023 Plans:*** Continuation of the automation and virtualization efforts to support the technical modernization of AIC testing. Funding provided for purchase of hardware & software integration, virtualization and automation, software licensing and labor and other integration efforts. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Effort for Army Interoperability Certification (AIC) modernization initial phase to enhance CTSF testing capabilities anticipated to be completed by the end of FY23.	3.156	3.234	-
Title: SBIR/STTR ***FY 2023 Plans:***	-	0.338	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Funding transferred in accordance with Title 15 USC §638			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638			
Accomplishments/Planned Programs Subtotals	7.077	9.248	4.380

	FY 2022	FY 2023
Congressional Add: Red Team Automation/Zero Trust Capabilities	-	23.000
FY 2023 Plans: Red Team Automation/Zero Trust Capabilities		
Congressional Adds Subtotals	-	23.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Transition from executing a single test event at a time to multiple simultaneous test events using new universal mission threads, providing speed and efficiency to the test/acquisition timeline. Execute system of systems interoperability testing and certification through the use of Government and Systems Engineering and Technical Analysis (SETA) contract personnel experienced in product development and interoperability testing. Testing and certification occurs in a cyclical fashion, with an expectation of an annual Software Block/Capability Set test followed with cyclical multiple test events to ensure integrity of software baselines to the Warfighter. Engineering Services provides strategic integration of software into a system of systems/family of systems environment to support interoperability testing. Establish and maintain Configuration Management and version control of the Army's Interoperable Battle Command LandWarNet Baseline. Distributed testing capability uses local assets and leverages other federated test facilities to create synergy and realize efficiencies.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C29 / *Centralized Technical Support Facility (CTSF)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	Various	Various : Various	-	-		0.338		-		-		-	0.000	0.338	-
		Subtotal	-	-		0.338		-		-		-	0.000	0.338	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CECOM Matrix	Allot	Program and Budget Analysis Support : Fort Hood, TX/ Aberdeen Proving Grounds, MD	5.847	0.145		0.148		0.151		-		0.151	0.000	6.291	-
ISSA/Training/TDY	Allot	Site Support Activities : Fort Hood, TX	0.980	0.337		0.165		0.168		-		0.168	0.000	1.650	-
Supplies	C/UCA	Management Operations, Logistics Support : Fort Hood, TX	1.628	0.098		0.074		0.075		-		0.075	0.000	1.875	-
Moving Cost	Allot	Management Operations, Logistics Support : Fort Hood, TX	0.002	0.001		-		-		-		-	0.000	0.003	-
		Subtotal	8.457	0.581		0.387		0.394		-		0.394	0.000	9.819	N/A

Remarks

Under "open-the-door" cost model, all In-house support efforts are included under Test & Evaluation.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C29 / *Centralized Technical Support Facility (CTSF)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CECOM RS3	C/CPFF	Test, Configuration Management : Fort Hood, TX	20.580	0.473	Apr 2022	1.813	Apr 2023	0.443		-		0.443	0.000	23.309	-
CECOM GSA BMO SB SITE SUPPORT SERVICES	C/T&M	Facilities, Maintenance, Security : Fort Hood, TX	13.765	1.415	Mar 2022	1.421	Apr 2023	1.430		-		1.430	0.000	18.031	-
In-House Support	Allot	Test : Fort Hood,TX	13.960	1.451		1.675		1.587		-		1.587	0.000	18.673	-
Equipment/Instrumentation	C/UCA	Test Equipment Infrastructure : Fort Hood, TX	3.204	0.001		0.382		0.526		-		0.526	0.000	4.113	-
Modernization	MIPR	Test, Configuration Management : Fort Hood, TX	1.328	3.156		3.232		-		-		-	0.000	7.716	-
Red Team Automation/ Zero Trust Capabilities	Various	Cyber Security : unknown	-	-		23.000		-		-		-	0.000	23.000	-
		Subtotal	52.837	6.496		31.523		3.986		-		3.986	0.000	94.842	N/A

Remarks

ARL Matrix effort became a "reimbursable" effort under Open-the-Door cost model effective in FY17; no longer "Direct" funded.
ISSA no longer funded at CTSF level.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	61.294	7.077		32.248		4.380		-		4.380	0.000	104.999	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

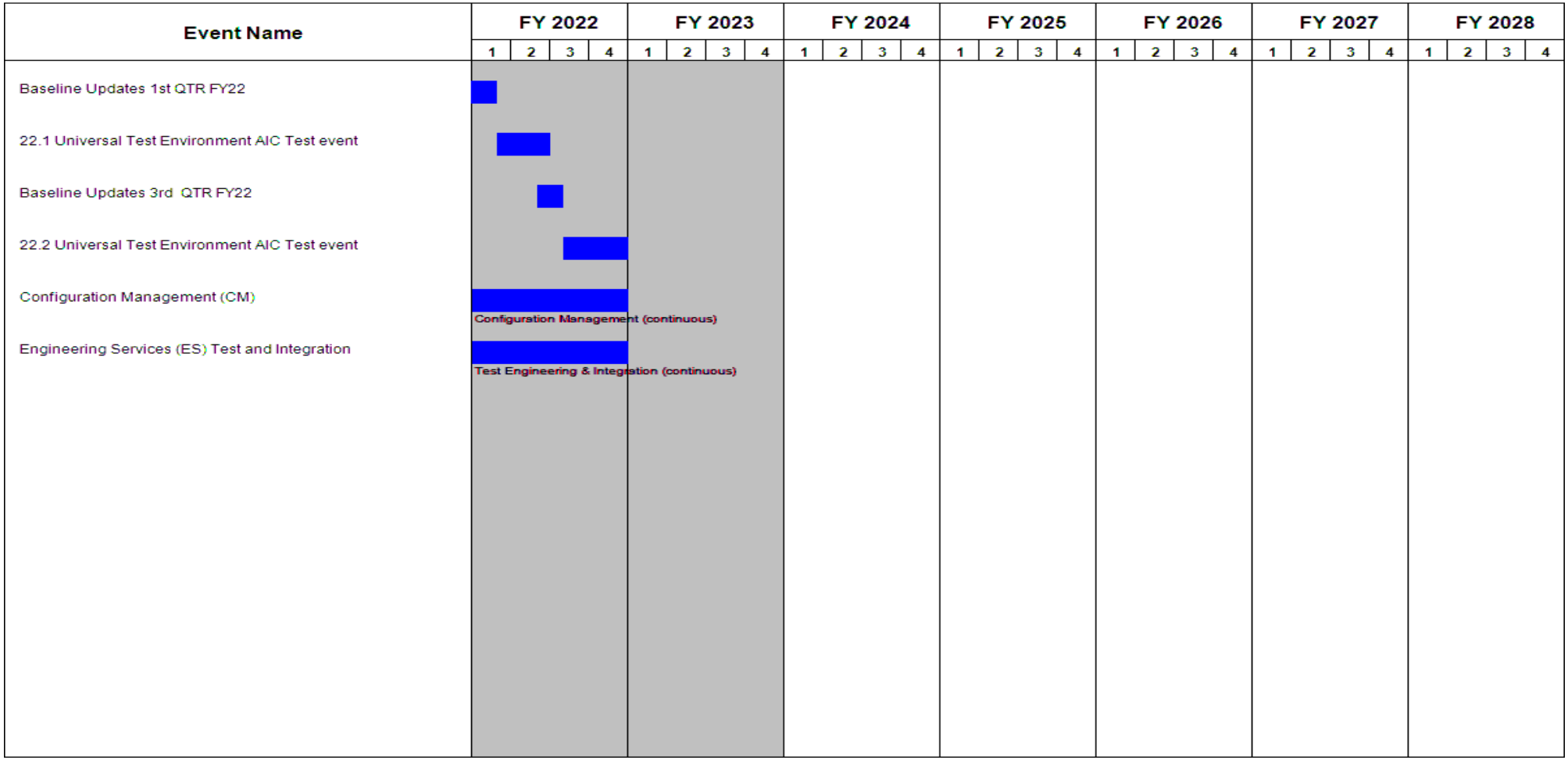


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
20.1 Universal Test Environment AIC Test event	2	2020	2	2020
Baseline Updates 3rd QTR FY20	2	2020	3	2020
20.2 Universal Test Environment AIC Test event	4	2020	4	2020
Baseline Updates 1st QTR FY21	4	2020	1	2021
21.1 Universal Test Environment AIC Test event	2	2021	2	2021
Baseline Updates 3rd QTR FY21	2	2021	3	2021
21.2 Universal Test Environment AIC Test event	4	2021	4	2021
Baseline Updates 1st QTR FY22	4	2021	1	2022
22.1 Universal Test Environment AIC Test event	1	2022	2	2022
Baseline Updates 3rd QTR FY22	2	2022	3	2022
22.2 Universal Test Environment AIC Test event	3	2022	4	2022
Configuration Management (CM)	1	2019	4	2022
Engineering Services (ES) Test and Integration	1	2019	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C34 / *Army Tac C2 Sys Eng*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
C34: *Army Tac C2 Sys Eng*	-	9.061	11.866	11.141	-	11.141	11.448	11.461	11.584	11.713	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is a key enabler of the Army Modernization Priorities in support of the Army Network Modernization Strategy Lines of Effort (LOEs) 1-4 (Unified Network, Common Operating Environment, Interoperability, and Command Post Mobility & Survivability). Project C34, Army Tactical Command and Control Systems Engineering supports the Army's Network Modernization Strategy and coordinates technical efforts across and outside of PEO Command, Control, Communications-Tactical (PEO C3T) to ensure integration with the current and future Mission Command Network. Project C34 provides technical support for programs aligned with LOEs 1 through 4 that inform the design and solutions with specific emphasis on the ability for the different efforts to be integrated and interoperable with one another. Efforts support Army Modernization priorities including Army Unified Network Plan, Multi-Domain Operations, Joint All Domain Command and Control (JADC2), Data Modernization and emerging data-centric requirements.

Project C34, Army Tactical Command and Control Systems Engineering: This project funds the PEO C3T System of Systems (SoS) engineering and integration, experimentation, acquisition management, testing, fielding and sustainment support to ensure interoperability and affordability within the PEO C3T portfolio. The effort focuses on SoS Engineering and Integration for the Mission Command Network with increased emphasis on immediate Warfighter needs as well as leveraging emerging technologies.

Fiscal Year 2024 will focus on the continued development, implementation and integration of the Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) network architectures. This includes maturing the technology enhancement roadmap for SoS capability evolution across the PEO C3T portfolio that incorporates Cross Functional Team initiatives; network integration support and design products for system validation experimentation and integration testing including N-CFT led activities; integration of tactical networked capabilities for all Mission Command Network systems and integration events; integration of tactical information assurance solutions and security measures for consistent cyber protection; and support to N-CFT evaluations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: System of Systems (SoS) Developmental Test and Integration Test Support across tactical C2 systems	0.976	1.362	1.312
Description: Funds support the following effort: ***FY 2023 Plans:*** Continue to provide the infrastructure and support to conduct integration testing and systems engineering for C3T systems, products, technical insertions, and systems under evaluation, ensuring integration of capabilities across the network. Funds include sustainment of increased level of integration testing and required maintenance to support data-centric network design.			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Funds also include continued participation as part of the Army Interoperability Certification (AIC) Federated Net-centric Sites (FaNS) facility. ***FY 2024 Plans:*** Continue to provide the infrastructure and support to conduct integration testing and systems engineering for C3T systems, products, technical insertions, and systems under evaluation, ensuring integration of capabilities across the network. Funds include sustainment of increased level of integration testing and required maintenance to support data-centric network design. Funds also include continued participation as part of the Army Interoperability Certification (AIC) Federated Net-centric Sites (FaNS) facility. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease accounts for leveraging planned capabilities provided by CIO and Enterprise Cloud Management Activity (ECMA) enabling DevSecOps which reduces some of the hardware and software requirements necessary to conduct integration testing.			
Title: Conduct and Support System of Systems (SoS) Interoperability Engineering ***Description:*** Funds support the following efforts: ***FY 2023 Plans:*** Across the Army Unified Network and Mission Command applications within and external to PEO C3T, provide integration support for testing, exercises and experimentation. Identify critical integrated test points, monitor developmental testing at integration points, develop event architectural data processes and products, and facilitate the transition of Network capabilities to the warfighter. Provide technical support to exercises and demonstrations of Army modernization initiatives. Develop integration testing strategies designed to enhance Development Security Operations (DEVSECOPS) implementation and more expeditious testing cycles. ***FY 2024 Plans:*** Across the Army Unified Network and Mission Command applications within and external to PEO C3T, provide integration support for testing, exercises and experimentation. Identify critical integrated test points, monitor developmental testing at integration points, develop event architectural data processes and products, and facilitate the transition of Network capabilities to the warfighter. Provide technical support to exercises and demonstrations of Army modernization initiatives. Develop integration testing strategies designed to enhance Development Security Operations (DEVSECOPS) implementation and more expeditious testing cycles. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase due to inflation.	3.021	2.468	2.585
Title: Development and Implementation of Tactical Information Assurance (IA)	0.403	1.284	1.293

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Description: Funds support the following efforts: ***FY 2023 Plans:*** Continue to implement ARCYBER, CIO, G6 and CYBERCOM guidance for execution of Cyber Security policies and procedures at the tactical level. Continue to document the current tactical network security architecture with the goal of developing recommendations to eliminate inconsistencies/duplications, increasing the security posture, decreasing complexity of operations, and decreasing costs. Support planning of tactical implementation of integrated security approaches for the Army Unified Network. This includes support for incorporation of DoD-driven Zero Trust principles. ***FY 2024 Plans:*** Continue to implement ARCYBER, CIO, G6 and CYBERCOM guidance for execution of Cyber Security policies and procedures at the tactical level. Continue to document the current tactical network security architecture with the goal of developing recommendations to eliminate inconsistencies/duplications, increasing the security posture, decreasing complexity of operations, and decreasing costs. Support planning of tactical implementation of integrated security approaches for the Army Unified Network. This includes support for incorporation of DoD-driven Zero Trust principles. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase due to inflation.			
Title: System of Systems (SoS) Engineering and Integration Evolution of the Network ***Description:*** Funds support the following efforts: ***FY 2023 Plans:*** Continue technical implementation of cross-PEO System of Systems Engineering and Integration analysis and processes to ensure successful development and engineering of current and future systems for Unified Network. Includes SoS engineering design for capabilities planned to field in FY 2025 and FY 2027 to include Program of Record and emerging Network Modernization technologies. Continue to deliver engineering products to support strategic decisions or address operational technical challenges. ***FY 2024 Plans:*** Continue technical implementation of cross-PEO System of Systems Engineering and Integration analysis and processes to ensure successful development and engineering of current and future systems for Unified Network. Includes SoS engineering design for capabilities planned to field in FY 2025 and FY 2027 to include Program of Record and emerging Network Modernization technologies. Continue to deliver engineering products to support strategic decisions or address operational	1.561	1.812	1.666

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
technical challenges. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease due to reduction in development and delivery of engineering products.			
Title: System of Systems Development ***Description:*** Funds support the following efforts: ***FY 2023 Plans:*** Continue to develop System-of-Systems Engineering tools, standards and interfaces to support DoD-driven initiatives. Tool development and implementation improves technical integration across the Army Unified Network. Tools also support integration of technical, logistics and business data for improved trade studies in support of programmatic decisions. ***FY 2024 Plans:*** Continue to develop System of Systems Engineering tools, standards and interfaces to support DoD-driven initiatives. Tool development and implementation improves technical integration across the Army Unified Network. Tools also support integration of technical, logistics and business data for improved trade studies in support of programmatic decisions. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease due to reduction in development of SoS Engineering tools.	2.875	3.407	3.184
Title: Mission Command Network Synchronization and Integration Support ***Description:*** Funds are for the following effort: ***FY 2023 Plans:*** Continue the support of current force and the development of future force C5ISR across the tactical network to ensure all Assistant Secretary of the Army (Acquisition, Logistics & Technology) (ASA(ALT)) programs are synchronized and redundancies and overlapping capabilities are reduced across the network and in synchronization with Army Modernization priorities and Cross Functional Team activities. Develop effective engineering strategies to integrate tactical applications for use across the Mission Command network to include support to the Common Operating Environment Technical Authority. Continue to perform network planning and integration activities across all cross-domain system-of-systems future capabilities and technologies. Develop or support development of networking documentation and standards identification that defines integration of evolving Capability Set systems. Provide technical support to exercises and demonstrations of Army modernization initiatives such as Mission Partner Environment SEC/REL implementation and Army Futures Command (AFC) Project Convergence. ***FY 2024 Plans:*** Continue the support of current force and the development of future force C5ISR across the tactical network to ensure all	0.225	1.100	1.101

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Assistant Secretary of the Army (Acquisition, Logistics & Technology) (ASA(ALT)) programs are synchronized and redundancies and overlapping capabilities are reduced across the network and in synchronization with Army Modernization priorities and Cross Functional Team activities. Develop effective engineering strategies to integrate tactical applications for use across the Mission Command network to include support to the Common Operating Environment Technical Authority. Continue to perform network planning and integration activities across all cross-domain system-of-systems future capabilities and technologies. Develop or support development of networking documentation and standards identification that defines integration of evolving Capability Set systems. Provide technical support to exercises and demonstrations of Army modernization initiatives such as Mission Partner Environment SEC/REL implementation and Army Futures Command (AFC) Project Convergence. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase due to inflation.			
Title: SBIR/STTR Transfer ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638	-	0.433	-
Accomplishments/Planned Programs Subtotals	9.061	11.866	11.141

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Not applicable for this item.

D. Acquisition Strategy

This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, interoperability, support to fielding and sustainment. It will focus on System of Systems (SoS) Systems Engineering and Integration for the tactical network with increased emphasis on immediate Warfighter needs as well as leveraging emerging technologies. Efforts align to support the acquisition strategies of the programs that must connect to the network.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C34 / *Army Tac C2 Sys Eng*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.433		-		-		-	0.000	0.433	-
		Subtotal	-	-		0.433		-		-		-	0.000	0.433	N/A

Remarks

Decrease to funding transfer in FY23 in accordance with Title 15 USC 638

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Tactical Info/Network Synchronization/SoS Dev	C/CPFF	Bowhead : APG MD	10.507	0.879	Jan 2022	1.794	Nov 2022	1.945	Nov 2023	-		1.945	Continuing	Continuing	Continuing
SoS Development	Various	Various : APG, MD	5.590	1.950	Dec 2021	3.279	Oct 2022	2.699	Oct 2023	-		2.699	Continuing	Continuing	Continuing
SoS Eng and Integ of the Network	SS/FP	MITRE : Aberdeen Proving Ground, MD/ Eatontown, NJ	111.401	1.561	Jan 2022	1.245	Oct 2022	1.666	Oct 2023	-		1.666	Continuing	Continuing	Continuing
System of Systems (SoS) Interoperability Engineering	C/CPFF	CACI : APG, MD	-	2.389	Apr 2022	1.792	Nov 2022	1.886	Nov 2023	-		1.886	Continuing	Continuing	Continuing
SoS Developmental Test and Integration Test Support	C/Various	Various : Various	-	0.976	Mar 2022	1.362	Nov 2022	1.312	Nov 2023	-		1.312	Continuing	Continuing	Continuing
Tactical Information	TBD	Various : Various	-	0.404	Feb 2022	1.284	Oct 2022	0.709	Oct 2023	-		0.709	Continuing	Continuing	Continuing
		Subtotal	127.498	8.159		10.756		10.217		-		10.217	Continuing	Continuing	N/A

Remarks

Increases due to allocation of requirements to Project C34 as funding source. Decreases due to reduction in planned System of Systems Engineering support, development of tools and required hardware and software necessary to conduct integration testing.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C34 / *Army Tac C2 Sys Eng*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System of Systems (SoS) Interoperability Engineering	MIPR	MATRIX - C5ISR : Aberdeen Proving Ground, MD	14.946	0.677	Jan 2022	0.677	Nov 2022	0.698	Oct 2023	-		0.698	0.000	16.998	Continuing
Network Synchronization	MIPR	MATRIX - C5ISR : Aberdeen Proving Ground, MD	-	0.225	Dec 2021	-		0.226	Oct 2023	-		0.226	0.000	0.451	-
		Subtotal	14.946	0.902		0.677		0.924		-		0.924	0.000	17.449	N/A

Remarks

Support costs capture Matrix labor associated with Integration and Test Support among PORs.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	142.444	9.061		11.866		11.141		-		11.141	Continuing	Continuing	N/A

Remarks

FY22 updated for actual execution. Increases in FY24 due to allocation of requirements to Project C34 as funding source.

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

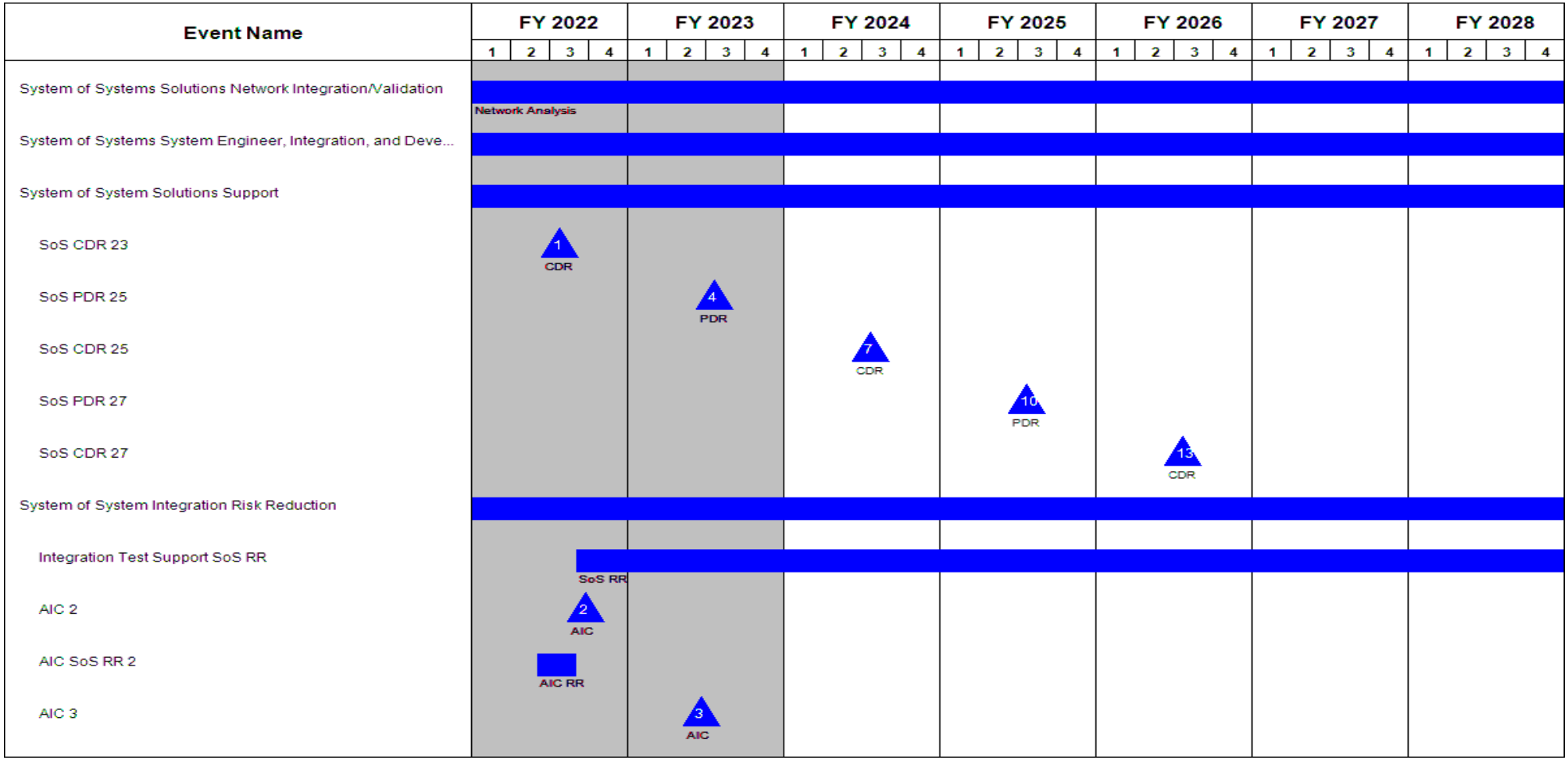


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

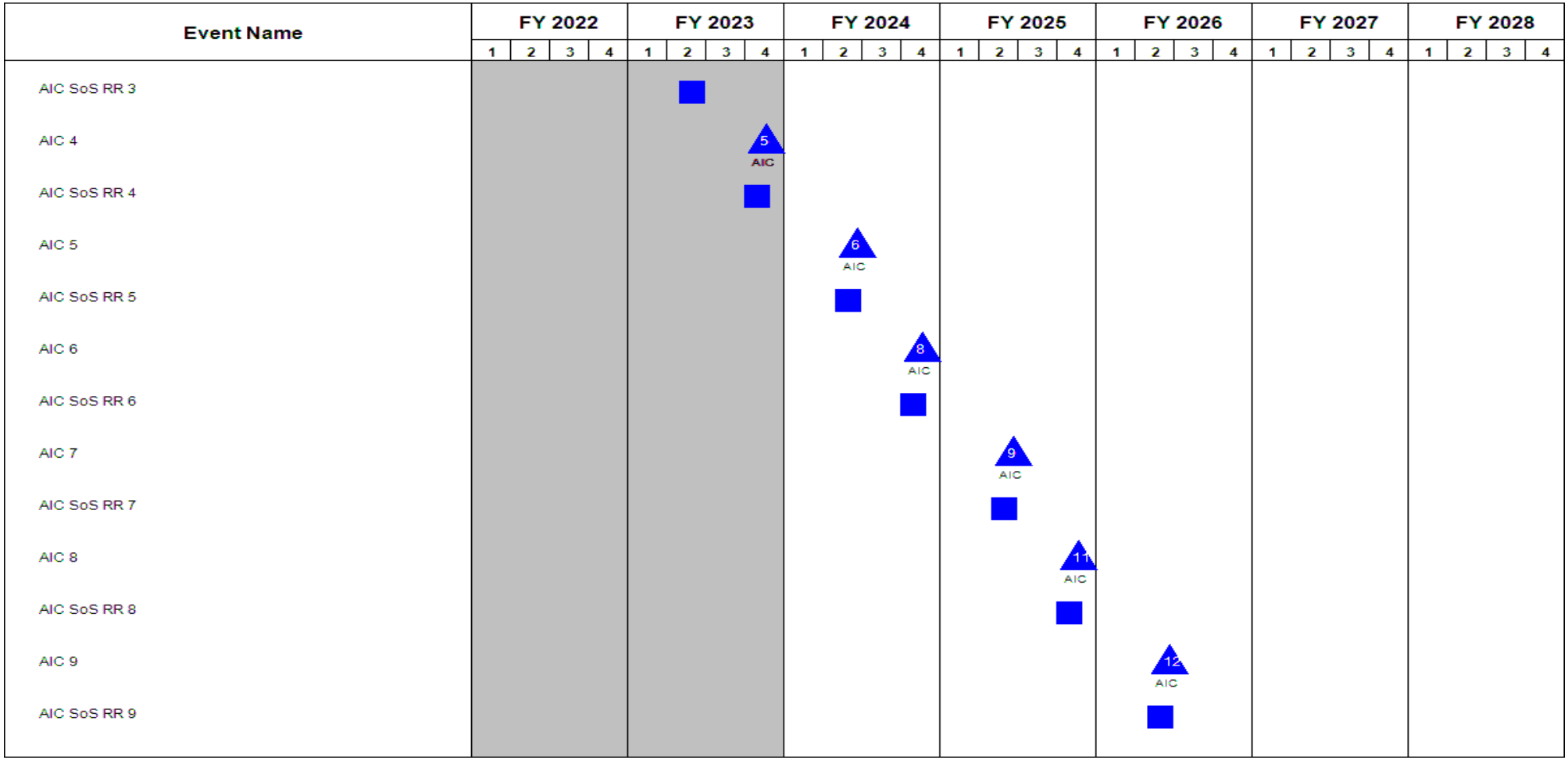


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

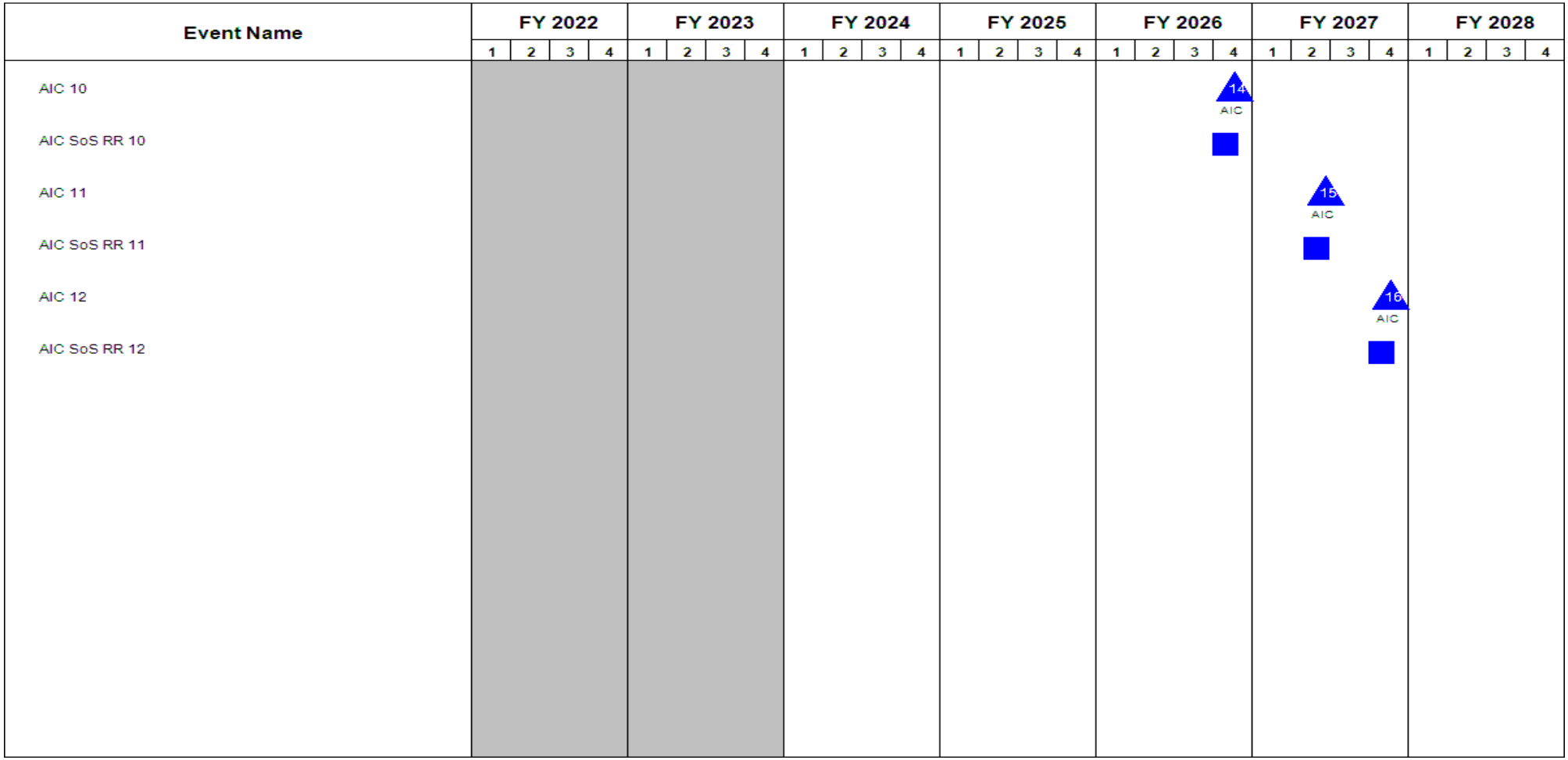


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
System of Systems Solutions Network Integration/Validation	1	2022	4	2028
System of Systems System Engineer, Integration, and Development	1	2022	4	2028
System of System Solutions Support	1	2022	4	2028
SoS PDR 23	3	2021	3	2021
SoS CDR 23	3	2022	3	2022
SoS PDR 25	3	2023	3	2023
SoS CDR 25	3	2024	3	2024
SoS PDR 27	3	2025	3	2025
SoS CDR 27	3	2026	3	2026
System of System Integration Risk Reduction	1	2022	4	2028
Integration Test Support SoS RR	3	2022	4	2028
AIC 2	3	2022	3	2022
AIC SoS RR 2	2	2022	3	2022
AIC 3	2	2023	2	2023
AIC SoS RR 3	2	2023	2	2023
AIC 4	4	2023	4	2023
AIC SoS RR 4	4	2023	4	2023
AIC 5	2	2024	2	2024
AIC SoS RR 5	2	2024	2	2024
AIC 6	4	2024	4	2024
AIC SoS RR 6	4	2024	4	2024
AIC 7	2	2025	2	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AIC SoS RR 7	2	2025	2	2025
AIC 8	4	2025	4	2025
AIC SoS RR 8	4	2025	4	2025
AIC 9	2	2026	2	2026
AIC SoS RR 9	2	2026	2	2026
AIC 10	4	2026	4	2026
AIC SoS RR 10	4	2026	4	2026
AIC 11	2	2027	2	2027
AIC SoS RR 11	2	2027	2	2027
AIC 12	4	2027	4	2027
AIC SoS RR 12	4	2027	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) DD1 / *Unified Network Technology Trans & Integ (UNTTI)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
DD1: *Unified Network Technology Trans & Integ (UNTTI)*	-	-	-	7.898	-	7.898	4.455	4.549	4.398	4.237	0.000	25.537
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Unified Network Technology Trans & Integ (UNTTI) is a new start within the Army Tactical Command & Control Hardware & Software program in FY 2024.

A. Mission Description and Budget Item Justification

This funding line is a new start in FY24. It is directly aligned to the Army priority for network modernization and supports the Army's strategy for establishing a Unified Network. Unified Network Technology Transition and Integration (UNTTI) is directly aligned to the Army Network Modernization Strategy Line of Effort 1 (LOE 1) Unified Network and LOE 4 Command Post Mobility and Survivability.

UNTTI is an RDT&E initiative enabling transport agnostic, high-capacity and resilient tactical communications for expeditionary operations. UNTTI efforts support system/subsystem development and demonstration, aimed at integration, maturation, evaluation and testing to validate system prototypes meet requirements. In FY2024, the UNTTI efforts include TEM Projects - Pathway Diversity (Automatic-PACE software), Line of Sight (LOS) - Command Post Networking, and Satellite Communications (SATCOM) - Modem Virtualization. These technologies support new and improved capabilities with reduced Size, Weight, and Power, while increasing throughput, providing network resiliency and Low Probability of Intercept/Low Probability of Detection.

The Program Executive Office Command, Control, Communications-Tactical (PEO C3T) is responsible for prioritizing, programming, managing and executing the projects detailed below and ensuring these funds are prioritized to support the Army modernization priorities and prototyping. The Network Cross Functional Team (N-CFT), Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, Army Capability Network (ACM) Networks and Services (N&S) support the prioritization of technology demonstrations, focused evaluations, and expert analyses to inform future requirements, mature technologies, and deliver new capabilities. These projects inform technology integration and support user assessments and rapidly transition to appropriate programs.

UNTTI procures, modifies, integrates and tests system prototypes to insert enhanced capabilities in accordance with Army modernization priorities such as Capability Set fieldings. UNTTI supports developing technical, logistics, training, and other acquisition documentation to assist with the transition, insertion, and integration of efforts across PM Tactical Network. In addition, UNTTI resources validation and test efforts which improves reliability, maintainability, and supportability of Tactical Network equipped units. These improvements avoid future costs by mitigating single point failures and hardening the network which ultimately improves network and cyber resiliency and unit availability for contingency operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Systems Engineering and Program Management	-	-	0.752

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DD1 / *Unified Network Technology Trans & Integ (UNTTI)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Description: Includes overall management of program execution, major events, reporting, funding execution, and contract management. Includes participation in program planning and Integrated Product Team meetings with key stakeholders including the Network Cross Functional Team (N-CFT), Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, Army Capability Network (ACM) Networks and Services (N&S), etc. ***FY 2024 Plans:*** Funds matrix and contractor personnel labor and travel requirements. Includes program oversight, systems engineering and technical control, risk management, documentation, and fielding support for UNTTI efforts. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** New start. Increase is due to emerging requirement.			
Title: TEM Projects - Pathway Diversity ***Description:*** TEM Projects - Pathway Diversity is a user configurable software solution that enables the network to be optimized based on real-time battlefield conditions. This software increases network resiliency and leverages multiple transports to send/ receive increased throughput simultaneously. ***FY 2024 Plans:*** Funds improve the usability, security, and performance aspects of the software based on FY23 small-scale operational feedback. Funds prototype procurement/modification, complete a large-scale pilot event, incorporating new transport systems (mesh SATCOM, LOS, etc.), RHN(s), and select Units (ESB-E or DIV focus) to understand integration and performance at scale. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** New start. Increase supports evaluating solutions at scale.	-	-	2.417
Title: Line of Sight (LOS) - Command Post Networking ***Description:*** Line of Sight (LOS) - Command Post Networking is a radio solution capable of functioning in multiple operating environments and can switch radio frequencies based on the physical environment with limited user interaction. This system provides more resilient communications for use between command post nodes and supports Command Post Integrated Infrastructure (CPI2). ***FY 2024 Plans:*** Funds will be used for prototype procurement/modification, to conduct required cyber assessments and Information Assurance certifications, and testing to MIL-STD-810H (Environmental) and MIL-STD-461G (Electromagnetic Interference). ***FY 2023 to FY 2024 Increase/Decrease Statement:***	-	-	0.754

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DD1 / *Unified Network Technology Trans & Integ (UNTTI)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
New start. Required testing to support integration into CPI2.			
Title: Satellite Communications (SATCOM) - Modem Virtualization	-	-	3.975
Description: Satellite Communications (SATCOM) - Modem Virtualization funds prototyping efforts focused on satellite communications (SATCOM) terminal and modem technologies to increase resiliency through multi-orbit, multi-constellation efforts while reducing system Size, Weight, and Power and leveraging COTS hardware platforms. ***FY 2024 Plans:*** Funds will be used for prototype procurement/modification, to complete certification requirements (commercial and/or military), MIL-STD testing, terminal and system integration, and Risk Reduction events leading towards a Unit Experimentation and will provide the required technical expertise to plan/execute integration and experimentation events. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** New start. Testing and certification required to validate new SATCOM technologies for Army use.			
Accomplishments/Planned Programs Subtotals	-	-	7.898

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

UNTTI related technologies will be pursued via competitively awarded contracts using best value source selection procedures. These technologies will be matured, demonstrated, tested, and evaluated in realistic environments. Selected technologies will integrate into existing programs as a modernization effort. The Integrated Product Team of key stakeholders including the Network Cross Functional Team (N-CFT), Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, Army Capability Network (ACM) Networks and Services (N&S) determine technologies for further evaluation to close capability gaps.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) DD1 / *Unified Network Technology Trans & Integ (UNTTI)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering/ Program Management	C/T&M	Various : APG	-	-		-		0.752	Feb 2024	-		0.752	0.000	0.752	-
		Subtotal	-	-		-		0.752		-		0.752	0.000	0.752	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TEM Projects - Pathway Diversity	SS/FFP	CloudJuncxion : APG	-	-		-		1.208	Feb 2024	-		1.208	0.000	1.208	-
Satellite Communications (SATCOM) - Modem Virtualization	SS/FFP	Various : To be determined	-	-		-		1.988	Feb 2024	-		1.988	0.000	1.988	-
		Subtotal	-	-		-		3.196		-		3.196	0.000	3.196	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TEM Projects - Pathway Diversity	SS/FFP	CloudJuncxion : APG	-	-		-		1.209	Feb 2024	-		1.209	0.000	1.209	-
Line of Sight (LOS) - Command Post Networking	SS/FFP	Various : To be determined	-	-		-		0.754	Feb 2024	-		0.754	0.000	0.754	-
Satellite Communications (SATCOM) - Modem Virtualization	SS/FFP	Various : To be determined	-	-		-		1.987	Feb 2024	-		1.987	0.000	1.987	-
		Subtotal	-	-		-		3.950		-		3.950	0.000	3.950	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) DD1 / *Unified Network Technology Trans & Integ (UNTTI)*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		7.898		-		7.898	0.000	7.898	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DD1 / *Unified Network Technology Trans & Integ (UNTTI)*

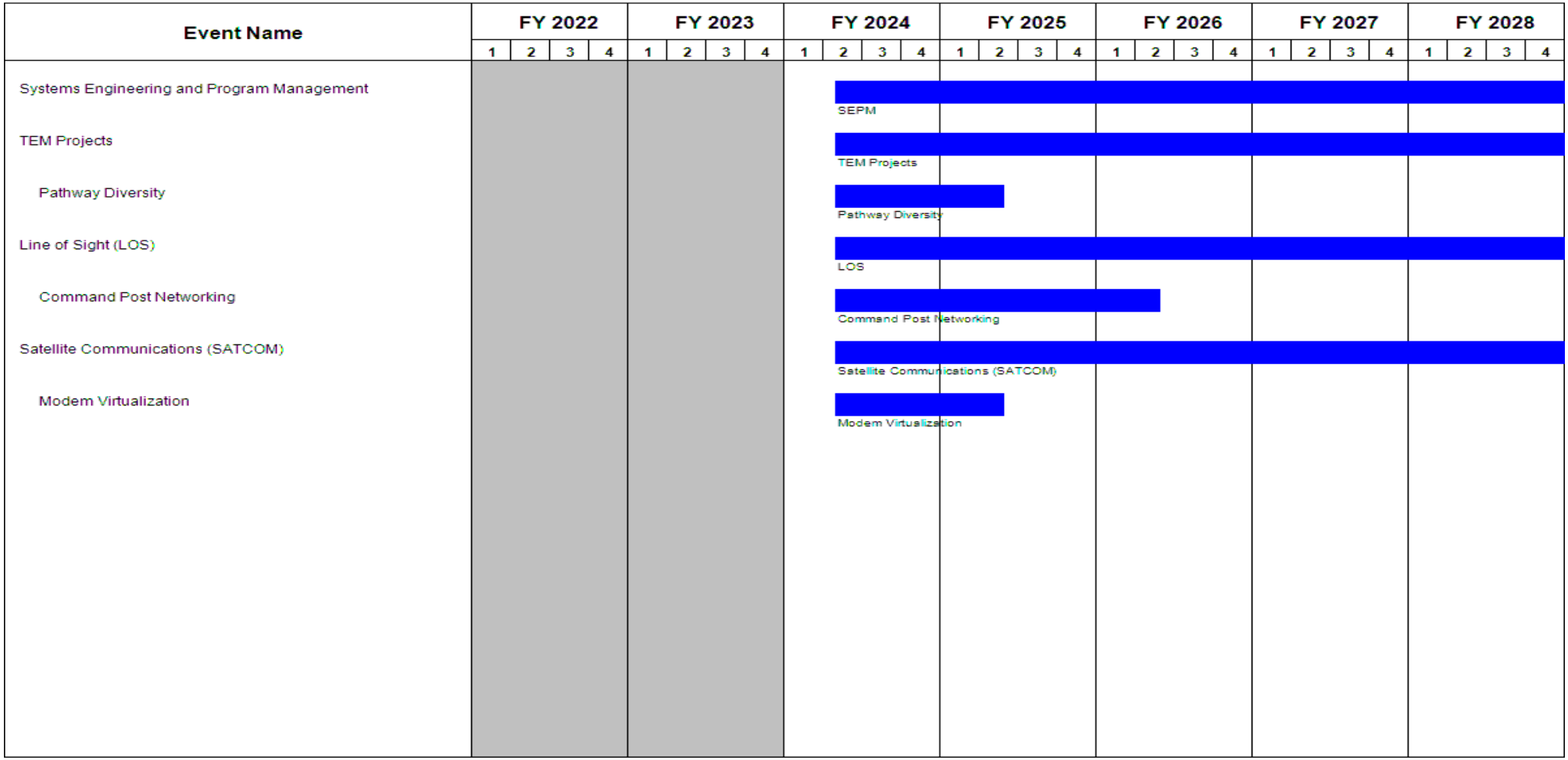


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DD1 / *Unified Network Technology Trans & Integ (UNTTI)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Systems Engineering and Program Management	2	2024	1	2029
TEM Projects	2	2024	1	2029
Pathway Diversity	2	2024	2	2025
Line of Sight (LOS)	2	2024	1	2029
Command Post Networking	2	2024	2	2026
Satellite Communications (SATCOM)	2	2024	1	2029
Modem Virtualization	2	2024	2	2025

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army											Date: March 2023	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
EJ4: *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	-	33.835	27.995	45.489	-	45.489	27.707	27.740	28.036	28.348	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned with the Army Network Modernization Strategy.

CPCE software provides the Commander the ability to understand, visualize, and direct the operational environment allowing them to plan and execute the mission scenario. CPCE enables the Commander to execute the mission scenario by providing a tailorable operational picture leveraging common data; the ability to collaborate within and external to the unit leveraging voice, video, and chat; the ability to plan through Wargaming leveraging Artificial Intelligence technology; and provides access to All Domain Networks, nonrecurring engineering of Cross Domain Solutions for Mission Partner Environment, data, information, and compute resources by leveraging Cloud Services

Command Post Computing Environment (CPCE) capabilities provide an available, reliable, and resilient infrastructure which unifies data and services within the Command Post. CPCE implements an integrated, interoperable, cyber-secure, software infrastructure that serves as the host for a unified set of multiple warfighting functional applications within the command post at echelons Battalion to Army Service Component Command; eliminating "stove-piped" systems, duplicative or redundant implementations, simplifying future application development efforts, and provides key improvements in interoperability and data sharing across multiple echelons.

CPCE software infrastructure and applications reside on Tactical Server Infrastructure (TSI) hardware as well as previously fielded servers. The TSI provides the converged computing and data storage hardware/software required to host the tactical Computing Environments, their supported Warfighter Functional Area applications, integration of Cross Domain Solutions for Mission Partner Environment, COE Cross-Cutting Capabilities and enables collaborative work environment.

FY2024 funding provides the Tactical Data Fabric; Convergence of Warfighting functions through the integration of intelligence, logistics, engineering, aviation, and fires applications, to include accelerated delivery of a combat power tool that enables a unit's logistical status and logistical running estimate; support to exercises and experiments through Developmental Operations (DevOps) engagements and Soldier Touch Points with Combatant Commands (COCOMs) to inform the implementation of the logistics application, Tactical Data Fabric and Cloud Native Mission Command; and Integration of Science and Technology (S&T) Efforts that support geospatial, planning, logistics, and predictive logistics war fighting capabilities. Funding also provides for Developmental and Operational testing of CPCE.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: SW Dev - Core Infrastructure	28.348	22.668	35.556

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024

Description: Provides the core software infrastructure that serves as the host for multiple warfighting functional applications within the command post at echelons Battalion to Army Service Component Command, eliminating "stove-piped" systems, duplicative or redundant implementations, simplifying future application development efforts, and enhancing interoperability and data sharing across multiple echelons. Core software development efforts include the development of Tactical Data Fabric and Sustainment capabilities; a tailorable operational picture leveraging the Tactical Data Fabric; Improved Geospatial capabilities; Improved system administration tools, Integration of user feedback from Developmental Operations (DevOps) engagements, Soldier Touch Points with Combatant Commands (COCOMs), Tactical Data Fabric and Cloud Native Mission Command development efforts and backwards compatibility to previously fielded enduring systems. Software development efforts will focus on designing the system to reduce the training burden on the Soldier, and improvements to the CPCE Software Development Kit (SDK) that enable convergence of warfighting functions.

FY 2023 Plans:
CPCE Increment 2 efforts focus on warfighting function / enduring system convergence, the implementation of Data Fabric, ensuring that CPCE software is cloud-enabled to enhance SW deployment, training, and operational system use. Convergence during FY23 includes the addition of Sustainment capabilities. Continue maturation of S&T efforts. Core infrastructure improvements continue in support of Capability Set 23 and enable convergence. This includes continued integration of the latest commercial software solutions and updates, and improved collaboration tools.

FY 2024 Plans:
CPCE Increment 2 will focus on delivering Tactical Data Fabric and Sustainment capabilities, enhancing collaboration capabilities, migrating CPCE to a "Cloud Native" environment, and integrating transitioned Science & Technology (S&T) capabilities to include information trust capabilities as well as geospatial planning tools. FY2024 will also include addressing interoperability requirements, improving interoperability with Joint Services and Coalition partners and convergence of warfighting functions. Convergence of warfighting functions include new Intelligence applications onto CPCE; new engineering capabilities; and will accomplish convergence of Air Defense and Air Space Coordination capabilities and accelerated delivery of a combat power tool that enables a unit's logistical status and sustainment running estimate. In addition, efforts will focus on integration of user feedback from exercises and experiments through Developmental Operations (DevOps) engagements, Soldier Touch Points with Combatant Commands (COCOMs), U.S. Army Pacific (USARPAC) and U.S. Army Europe and Africa (USAREUR-AF) on the Tactical Data Fabric, Logistics Command and Control (C2) capabilities and Cloud Native Mission Command development efforts. CPCE Increment 3 development will begin in FY2024.

FY 2023 to FY 2024 Increase/Decrease Statement:
Increase in funding due to planned development efforts in support of Tactical Data Fabric and Sustainment capabilities, "Cloud Native" environment migration, integration tasks required to support convergence stakeholders, integration of S&T information

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
trust capabilities as well as geospatial planning tools, and integration of user feedback, data analytics, and collaboration applications.			
Title: Hardware/Software Integration ***Description:*** The Tactical Server Infrastructure (TSI) server stacks hosts multiple software services including but not limited to: SQL, Chat, Active Directory, Microsoft Exchange, SharePoint, Defensive Cyber Operations (DCO) tools, and CPCE. Primary Hardware/Software integration tasks include developing the automation that reduces the time it takes to set up, manage and ensure updated security postures for the TSI environment on a recurring basis. ***FY 2023 Plans:*** HW/SW integration efforts will continue as the program will be conducting formal Operational Assessment of CPCE Increment 2, which will include multiple converging capabilities including data fabric, S&T technologies, and external warfighting functions. The TSI baseline for CPCE Increment 2 will be developed, including automated deployment of scripts and documentation. Integration of warfighter applications into the CPCE Increment 2 software and/or direct inject into the TSI hardware will be accomplished in FY23, in order to meet Army Network Modernization Strategy goals for Line of Effort 2, and Capability Set 23. ***FY 2024 Plans:*** In FY2024 the Hardware/Software integration effort will focus on transitioning the current TSI hardware configurations to a Server Edge Node configuration which supports cloud objectives as established in the Army Unified Network Strategy. In addition the FY2024 integration effort will focus on improving system automation to enable it to run on any server type. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase commensurate with the planned scope of work to meet HW/SW integration requirements in FY24.	1.100	1.136	1.192
Title: Test and Evaluation ***Description:*** CPCE/TSI will complete Developmental Testing (DT), and multiple Integration and Risk Reduction events in FY24 as part of the Integrated Test Strategy for CPCE Increment 2. These events will culminate in the CPCE Increment 2 software initial release/TSI Operational Test in FY24 that will inform a fielding decision. ***FY 2023 Plans:*** CPCE/TSI will complete Developmental Testing (DT), and multiple Integration and Risk Reduction events in FY23 as part of the Integrated Test Strategy for CPCE Increment 2. These events will culminate in the CPCE Increment 2/TSI Operational Test that will inform a fielding decision. ***FY 2024 Plans:***	1.267	1.027	6.288

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
CPCE will complete an Operational Test for CPCE Increment 2, Software Acceptance Tests, multiple Developmental Tests, multiple Soldier Touch Points, Cloud Native Mission Command Tests and Army Interoperability Certification test events. In addition to CPCE testing, the TSI hardware will complete multiple Soldier Touch Points and Developmental Tests as well as support the CPCE Operational Test. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase due to number of test and evaluations events planned for FY24: Operational Test for CPCE Increment 2 final release; Soldier Touch Points for the TSI Hardware and CPCE Increment 2 and Cloud Native Mission Command testing.			
Title: Program Management ***Description:*** Program management includes efforts related to the management and operations of the Product Management office. Includes matrix and contractor personnel, program planning meetings, IPTs, and market research activities related to the potential adoption of new technology solutions into the CPCE baseline. ***FY 2023 Plans:*** Program office management of engineering, logistics teams, SW development, system engineering, exercise support, and testing remains a requirement in FY23. This support includes personnel covered by Functional Support Agreements between PM Mission Command and various Government support agencies such as the Army Research and Development Center (ARDEC), and U.S. Army Combat Capabilities Development Command (DEVCOM). ***FY 2024 Plans:*** Program office management of engineering, logistics teams, SW development, system engineering, exercise support, and testing remains a requirement in FY24. This support includes personnel covered by Functional Support Agreements between PM Mission Command and various Government support agencies such as the U.S. Army Combat Capabilities Development Command (DEVCOM) Armaments Center. and the U.S Army Communications and Electronics Command (CECOM) Software Engineering Center (SEC). ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase due to program management matrix and SETA support required for increase in planned FY24 software development and testing efforts.	3.120	2.141	2.453
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638 ***FY 2023 Plans:***	-	1.023	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Funding transferred in accordance with Title 15 USC §638			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638			
Accomplishments/Planned Programs Subtotals	33.835	27.995	45.489

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• B70000: *COE Tactical Server Infrastructure (TSI)*	99.858	90.387	77.999	-	77.999	81.654	80.548	80.533	80.508	Continuing	Continuing

Remarks

Related to CPCE is the Tactical Server Infrastructure (TSI) funding line, B70000, which funds computer hardware and software servers/hosting platforms for CPCE software.

D. Acquisition Strategy

The initial Increment of CPCE (CPCE Inc 0) and TSI capabilities are based on Minimum Essential Capability (MEC) requirements specified in the Army's Directed Requirements for Command Post capabilities. The subsequent increments of CPCE and TSI requirements are codified within Joint Capabilities Integration and Development System (JCIDS) documents including the COE Information System Initial Capabilities Document (COE IS ICD), CPCE Requirements Definition Package (RDP) and TSI RDP. These JCIDS documents comprise an Information Technology (IT) Box construct, valid in five (5) year blocks. Each IT Box is revised/renewed for a follow-on 5-year block.

Requirements are further codified in Mission Command Center of Excellence (MCCoE) Capability Drop (CD) documents that contain Warfighting Function Operational Need summaries and detailed requirements sponsored by respective Army Centers of Excellence. In addition to these documents, CPCE will also incorporate technical requirements from other sources such as PEO C3T technical working groups (TWGs), Network Cross Functional Team (N-CFT) Capability Set design goals and directives, Cyber COE TWGs, user feedback resulting from Development Operations (DevOps) as Operational Incident Tickets (OIT), and emerging/future warfighting functional requirements already in draft form. As the capabilities continue to evolve, those capabilities are captured in the form of CDs to adapt to changes in the field.

The acquisition strategy for CPCE/TSI program is based upon the concept of Buy and Adapt, whereby the Government procures commercial technology and adapts it to meet specific Government requirements. CPCE/TSI consists of the integration of Commercial off the Shelf (COTS) hardware components, COTS software, and sequentially developed additional software capabilities.

CPCE Increment 0 brought the core software infrastructure and initial movement and maneuver capabilities. Increment 1 met the requirements of the CPCE Requirements Definition Package and Capability Drop 1 and focused on enhancements to Increment 0 and enabling system convergence. CPCE Increment 2 will bring

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

enhancements to existing capabilities, in addition to introducing new capabilities like Tactical Data Fabric, Logistics, additional convergence of warfighting functions and Cloud Native Mission Command. Future CPCE design and development will focus on Agile development and transition to user centric self-service architecture that is underpinned by the Tactical Data Fabric. CPCE capabilities will achieve Cloud Native Mission command while continuing warfighting function convergence. CPCE will also set the framework of self-service and data analytics functionality, nonrecurring engineering of Cross Domain Solutions for Mission Partner Environment, and continue addressing mission partner objectives outlined in the Army Unified Network Strategy.

CPCE/TSI is an Acquisition Category II program structured in Increments delivering capability every two years. Each Increment contains an initial (year one) and final (year two) capability release. In Increment 0 and Increment 1, Full Deployment Decisions were made on initial (year one) capability releases. In coordination with the Operational Test communities, the CPCE Increment 2 acquisition approach was restructured so the Full Deployment Decision will be based on the final capability release.

The Product Management Office delivers the CPCE core infrastructure (underlying basis for convergence), Movement & Maneuver capabilities, and Logistics Command and Control (C2) capabilities. The Program Management Office continues to fund developmental and convergence work that enhances the capabilities of the core infrastructure to align with integration efforts, while external organizations such as other Army Programs of Record and S&T organizations fund the development of specific warfighting capabilities and technologies for integration into the core framework. Testing is conducted continually with a culminating Operational Test prior to deployment decisions. Operational testing includes the core framework and all capabilities integrated since the prior release.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (Gov't-Matrix)	IA	Various Matrix Orgs incl CECOM SEC, ILSC, PRD, et al) : APG, MD	7.290	1.193	Oct 2021	1.175	Nov 2022	0.960	Nov 2023	-		0.960	Continuing	Continuing	-
PM Support (SETA Contractor)	C/FFP	Multiple incl CACI and others : APG, MD	21.435	1.927	Nov 2021	0.966	Nov 2022	1.493	Nov 2023	-		1.493	Continuing	Continuing	-
SBIR/STTR Transfer	TBD	NA : NA	-	-		1.023		-		-		-	0.000	1.023	-
		Subtotal	28.725	3.120		3.164		2.453		-		2.453	Continuing	Continuing	N/A

Remarks

Increase due to program management matrix and SETA support required for increase in planned FY24 core software development and testing efforts.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development - Core Infrastructure	Option/ Various	ARDEC, CCDC, Systematic : Picatinny, NJ APG, MD Centerville, VA	194.298	28.348	Nov 2021	22.668	Nov 2022	35.556	Nov 2023	-		35.556	Continuing	Continuing	-
Hardware / Software Integration	IA	Various Matrix Orgs incl CECOM SEC, ARDEC, ILSC, PRD, et al) : APG Md	27.047	1.100	Dec 2021	1.136	Feb 2022	1.192	Feb 2023	-		1.192	Continuing	Continuing	-
		Subtotal	221.345	29.448		23.804		36.748		-		36.748	Continuing	Continuing	N/A

Remarks

SW Development - Core Infrastructure increase in funding due to increase in planned development efforts to support Tactical Data Fabric and Sustainment capabilities, "Cloud Native" environment migration, integration tasks required to support convergence stakeholders, and integration of user feedback.
HW/SW Integration decrease commensurate with the planned scope of work to meet HW/SW integration requirements in FY24.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop and Conduct Tests and Assessments	MIPR	Multiple Test Agencies : Multiple Locations (Primary APG)	24.397	1.267	Oct 2021	1.027	Feb 2022	6.288	Dec 2023	-		6.288	Continuing	Continuing	-
		Subtotal	24.397	1.267		1.027		6.288		-		6.288	Continuing	Continuing	N/A

Remarks

Increase due to number of test and evaluations events planned for FY24: Operational Test for CPCE Increment 2 final release; Soldier Touch Points for the TSI Hardware and CPCE Increment 2 and Cloud Native Mission Command testing.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	274.467	33.835		27.995		45.489		-		45.489	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

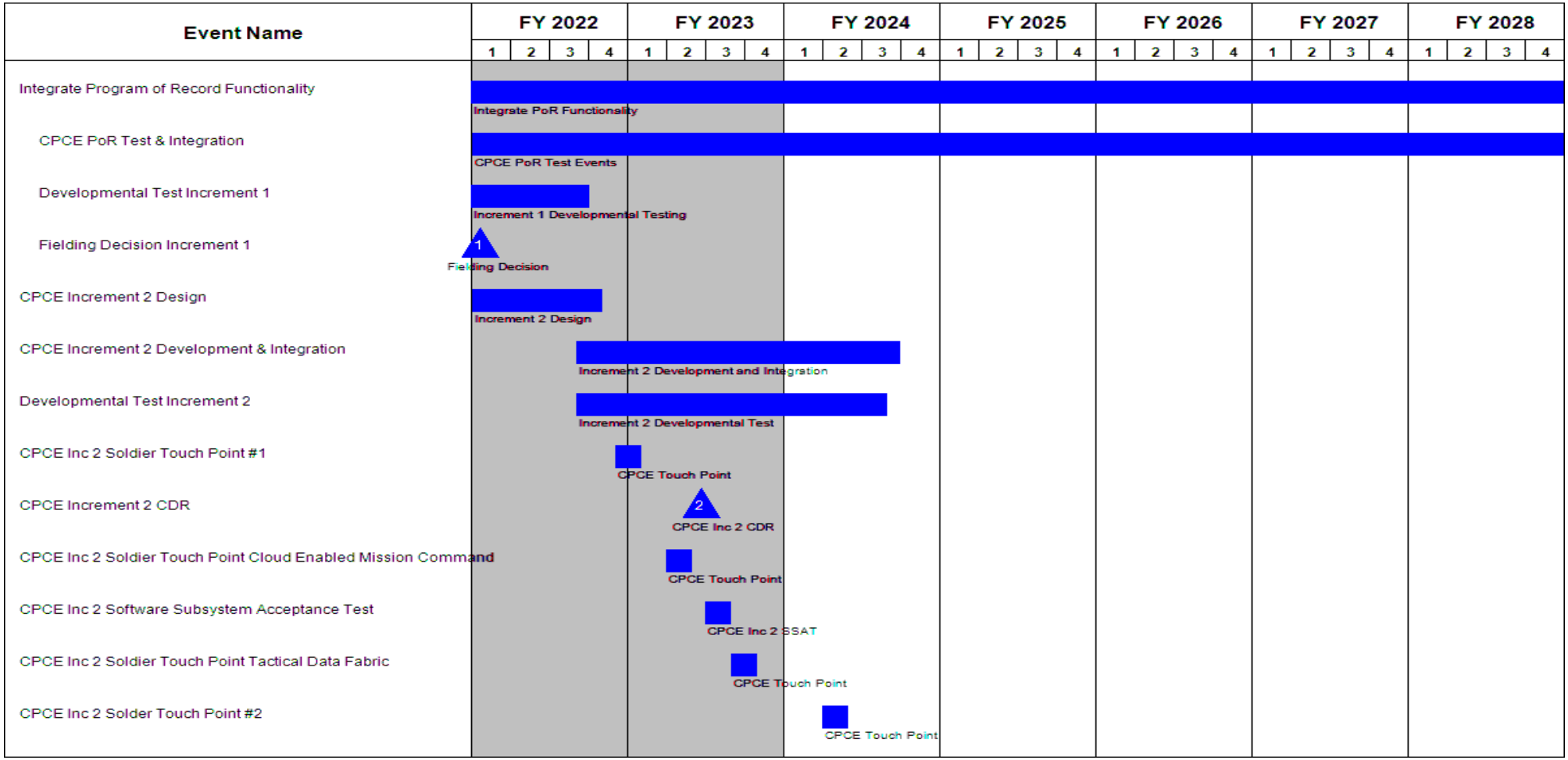


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

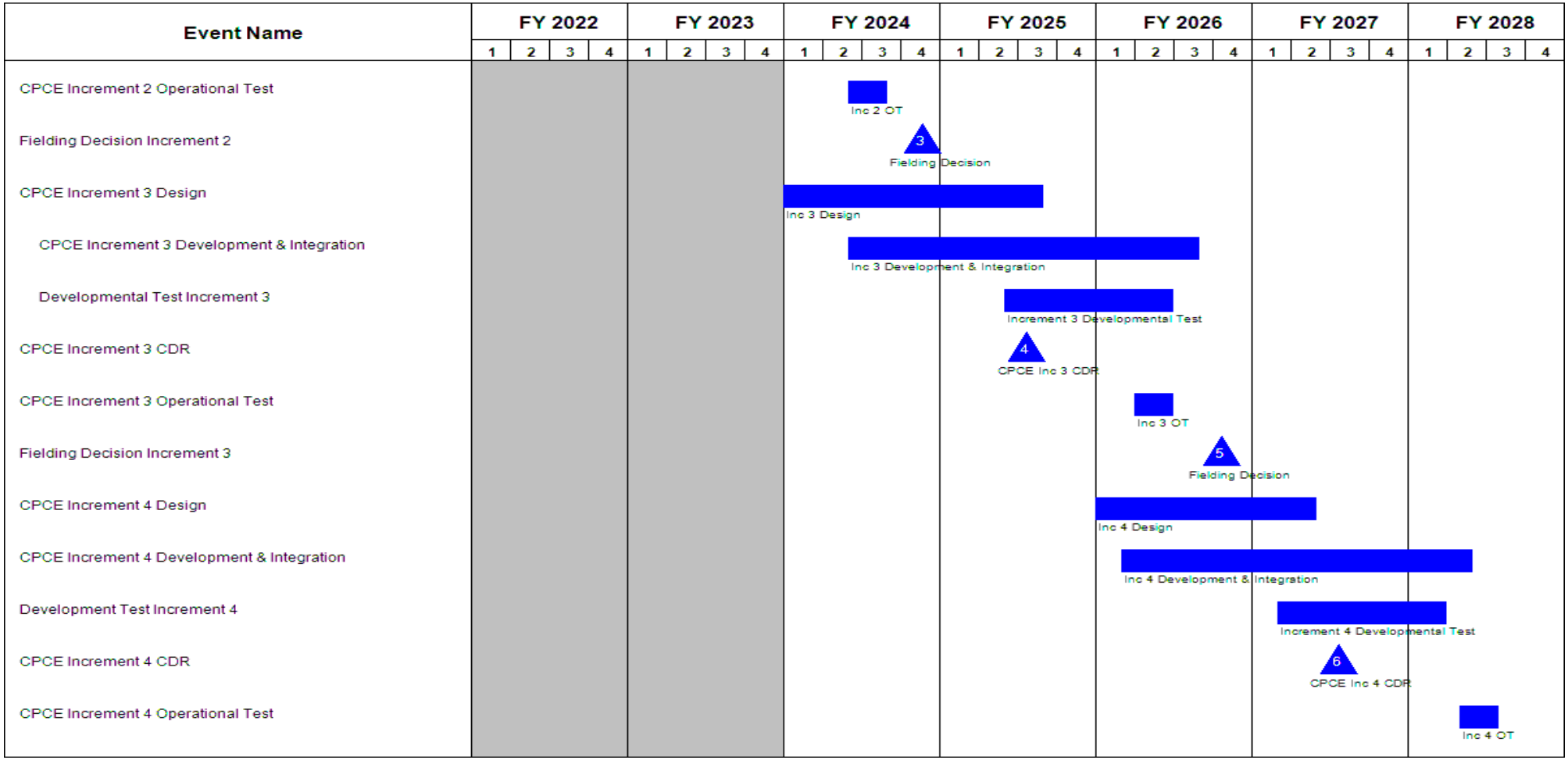


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Fielding Decision Increment 4																												7 Fielding Dec

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Integrate Program of Record Functionality	2	2019	4	2028
CPCE PoR Test & Integration	1	2018	4	2028
CPCE Increment 1 Design	3	2019	2	2020
CPCE Increment 1 Development & Integration	2	2020	4	2021
Developmental Test Increment 1	3	2020	3	2022
CPCE Increment 1 Operational Assessment	3	2021	4	2021
Fielding Decision Increment 1	1	2022	1	2022
CPCE Increment 2 Design	1	2022	4	2022
CPCE Increment 2 Development & Integration	3	2022	3	2024
Developmental Test Increment 2	3	2022	3	2024
CPCE Inc 2 Soldier Touch Point #1	4	2022	1	2023
CPCE Increment 2 CDR	2	2023	2	2023
CPCE Inc 2 Soldier Touch Point Cloud Enabled Mission Command	2	2023	2	2023
CPCE Inc 2 Software Subsystem Acceptance Test	3	2023	3	2023
CPCE Inc 2 Soldier Touch Point Tactical Data Fabric	3	2023	4	2023
CPCE Inc 2 Solder Touch Point #2	2	2024	2	2024
CPCE Increment 2 Operational Test	2	2024	3	2024
Fielding Decision Increment 2	4	2024	4	2024
CPCE Increment 3 Design	1	2024	3	2025
CPCE Increment 3 Development & Integration	2	2024	3	2026
Developmental Test Increment 3	2	2025	2	2026
CPCE Increment 3 CDR	3	2025	3	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CPCE Increment 3 Operational Test	2	2026	2	2026
Fielding Decision Increment 3	4	2026	4	2026
CPCE Increment 4 Design	1	2026	2	2027
CPCE Increment 4 Development & Integration	1	2026	2	2028
Development Test Increment 4	1	2027	1	2028
CPCE Increment 4 CDR	3	2027	3	2027
CPCE Increment 4 Operational Test	2	2028	3	2028
Fielding Decision Increment 4	3	2028	3	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army												Date: March 2023
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
EJ5: *MOUNTED COMPUTING ENVIRONMENT (MCE)*	-	21.076	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Beginning with FY 2023, the Army has realigned MCE RDT&E funding for the development of the Mounted Mission Command - Software (MMC-S) from this line to the Joint Battle Command - Platform (JBC-P) RDTE line (PE 0604805A/Proj 593). These funds will support continued MMC-S development as part of the MMC Family of Systems (MMC FoS) strategy for modernizing and replacing the JBC-P capability. Consolidating the RDTE funding enables agile development and flexibility in support of the MMC FoS.

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Modernization Strategy LOE 2, Common Operating Environment (COE).

The Mounted Computing Environment (MCE) supports LOE 2 by providing:
- Critical Interoperability features that bridge the communications gap between the Command Post Computing Environment (CPCE) and Mobile Handheld Computing Environment (Nett Warrior)
- Data mediation, message format translation, and waveform exchanges across all CEs delivering improved information dissemination
- Mounted Common Operating Picture (COP) data sources, shared blue / red situational awareness, and Position / Location Information across the CEs
- Common, reusable services that enable Warfighting Function (WfF) convergence for rapid capability development and delivery with reduced costs for external PORs
- Mounted platform data sensor collection, processing, and disbursement applications that enable and enhance WfFs on the battlefield
- Foundational Cross-Cutting Capabilities (CCCs) that integrate with Joint C5ISR and strike capabilities

The MCE, which is one of six Computing Environments (CE) under the COE, internally develops and hosts applications (apps) developed by programs external to Project Manager Mission Command (PM MC) to provide robust WfF capabilities. MCE RDTE funding is executed to develop Mounted Mission Command-Software (MMC-S) (described below) to enable these convergence efforts.

Requirements for MMC-S (MCE) are established in the Army Requirements Oversight Council (AROC)-approved COE Information Systems Initial Capability Document (IS ICD) and the MCE Requirements Definition Package (RDP). MMC-S will support the next-generation network, transceiver, and more mature cross-Computing Environment (CE) interfaces.

At the Materiel Development Decision (MDD) review, the Milestone Decision Authority (MDA) signed an Acquisition Decision Memorandum (ADM) in June 2020 designating MMC-S as an ACAT II program of record (POR) under the MCE RDP.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

MMC-S employs a Developmental Operations (DevOps) process to incrementally develop capability to satisfy Warfighter requirements and inform fielding decisions. DevOps activities will incorporate new capabilities and enhancements driven by the RDP and based on user feedback. Furthermore, MMC-S will provide the foundation to support third-party application convergence onto the MMC-S baseline. MMC-S utilizes the Android Tactical Assault Kit (TAK), which is a geospatial infrastructure and military situational awareness application that allows for precision targeting, surrounding land formation intelligence, situational awareness, navigation, and data sharing.

FY 2023 MCE RDTE funding has been realigned to JBC-P (PE 0604805A, Proj 593). These funds will support continued MMC-S development as part of the MMC Family of Systems (MMC FoS) strategy for modernizing and replacing the JBC-P capability. Consolidating the RDTE funding enables agile development and flexibility in support of the MMC FoS.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Software Development ***Description:*** MMC-S provides an integrated mission command capability across Platforms, through all echelons, delivering simplicity, intuitiveness, core services and applications, a common look and feel, and functionality across all Warfighting Functions (WfF); Fires, Logistics, Intelligence, and Maneuver. Software development is focused on enhanced situational awareness functions, cross-cutting data exchange services, and Mission Command applications displayed on the next-generation common geospatial solution [map] through a graphical user interface that delivers a "common look and feel" across the CEs.	17.707	-	-
Title: Software/Systems Engineering ***Description:*** Perform Software and Systems Engineering (SE) in support of the development of MMC-S (MCE) capabilities, applications and services, to include, but not limited to, executing engineering studies, software architecture development, system analysis, technical readiness assessments, technical exchange meetings and events, and development of related reports and deliverables described in the MCE RDP. SEs will coordinate the development of common infrastructure components with CPCE and M/HHCE to define and incorporate the COE cross-cutting capabilities.	0.972	-	-
Title: Test and Evaluation ***Description:*** Test and evaluation (T&E) efforts consist of planning and execution for required test events to inform fielding decisions and ensure the safe delivery of capability to the Warfighter. T&E events include: Development Operations (DevOps), Developmental Tests (DT), Software Assurance Tests, CS23 Integration Events, Risk Reduction Tests, Operational Demonstrations (Op Demos), Army Interoperability Certification (AIC) , Security Control Assessment-Validation, and Initial Operational Test and Evaluation (IOT&E).	1.683	-	-
Title: PM Support (Matrix & Contractor) ***Description:*** Program management includes overall management of program execution, major text events, reporting, technical support, and logistical support. Includes participation in program planning meetings, Integrated Project Teams, Technical	0.714	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Exchange Meetings, stakeholder management, 3rd party application convergence, and Science and Technology efforts and convergence. These efforts are continuous for the life of the program. They are not tied to specific versions of MMC-S.			
Accomplishments/Planned Programs Subtotals	21.076	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

MCE is the Army's initiative to provide simple and intuitive Mission Command on-the-Move (MCoTM) and situational awareness down to the platoon level. It is standards based, protected, and supports incremental improvements and WfF app capability enhancements. MMC-S leverages existing JBC-P hardware and network, and is deployed as a SW only upgrade to replace JBC-P SW. The MMC-Software will exploit the MMC-Transport (BFT 3 network) and hardware capability-maturation, continuously enhancing capabilities, security, and network resiliency that outpaces adversarial countermeasures and threats. MMC-S provides a common user-experience that enables leaders to lead and fight their formations from anywhere on the battlefield. MMC-S serves as the data mediator between disparate CEs, the Command Post Computing Environment (CPCE) and the Mobile Handheld Computing Environment (Nett Warrior), enabling seamless Mission Command and Common Operating Picture (COP) generation across all three CEs.

MMC-S utilizes an incremental development approach, leveraging DevOps, to ensure capability is delivered quickly, satisfies requirements, and addresses Warfighter feedback. This agile development process injects enhancements into the baseline software, making it easier and faster to incorporate technological advances. The product office conducts commercial software assessments to determine applicability and suitability for inclusion in the MMC-S baseline.

Software development increments and fielding decisions are agile and are programmatically aligned with the two-year Army Capability Sets within the five-year Requirements Development Package (RDP; i.e. - IT Box). MMC-S is developed in Capability Assessment Packages (CAP), which are small groupings of requirements and capability that are manageable, tailorable, and scalable to meet Warfighter needs. The CAPS are developed by the Lead Systems Integrator (LSI) in three to twelve month timeframes. Collections of CAPs form MMC-S Engineering Releases (ER) / Capability Drops (CDs), which build upon one another leading to a complete incremental release (i.e. version 3.1). Incremental releases will be fielded with the Army Capability Sets. Full Deployment Decision (FDD) for MMC-S v3.1 is scheduled for 4QFY23. FDD for MMC-S v3.2 is scheduled for 4QFY24, aligned to CS25. FDD for MMC-S v3.3 is scheduled for 4QFY26, aligned to CS27.

At the Materiel Development Decision (MDD) review, the Milestone Decision Authority (MDA) signed an Acquisition Decision Memorandum (ADM) in June 2020 designating MMC-S as an ACAT II program of record (POR) under the MCE RDP.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

Beginning with FY 2023, the Army has realigned MCE RDT&E funding for the development of the Mounted Mission Command - Software (MMC-S) from this line to the JBC- P RDTE line (PE 0604805A/Proj 593). These funds will support continued MMC-S development as part of the MMC Family of Systems (MMC FoS) strategy for modernizing and replacing the JBC-P capability. Consolidating the RDTE funding enables agile development and flexibility in support of the MMC FoS.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (Matrix & Contractor)	Various	PM Mission Command : Aberdeen Proving Ground, MD	6.143	0.714	Nov 2021	-		-		-		-	Continuing	Continuing	-
		Subtotal	6.143	0.714		-		-		-		-	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Various	PM Mission Cmd, Multiple Matrix Orgs and SW Dev Contractors : Aberdeen Proving Ground, MD	46.255	17.707	Dec 2021	-		-		-		-	Continuing	Continuing	-
Software/Systems Engineering	Various	PM Mission Cmd, Multiple Matrix Orgs and SW Dev Contractors : Aberdeen Proving Ground, MD	21.540	0.972	Nov 2021	-		-		-		-	Continuing	Continuing	-
		Subtotal	67.795	18.679		-		-		-		-	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test, Evaluation and Integration	MIPR	Multiple Test Agencies; Multiple Locations : Aberdeen Proving Ground, MD	8.995	1.683	Nov 2021	-		-		-		-	Continuing	Continuing	-
		Subtotal	8.995	1.683		-		-		-		-	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	82.933	21.076		-		-		-		-	Continuing	Continuing	N/A

Remarks

Beginning with FY 2023, the Army has realigned MCE RDT&E funding for the development of the Mounted Mission Command - Software (MMC-S) from this line to the JBC- P RDTE line (PE 0604805A/Proj 593). These funds will support continued MMC-S development as part of the MMC Family of Systems (MMC FoS) strategy for modernizing and replacing the JBC-P capability. Consolidating the RDTE funding enables agile development and flexibility in support of the MMC FoS.

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

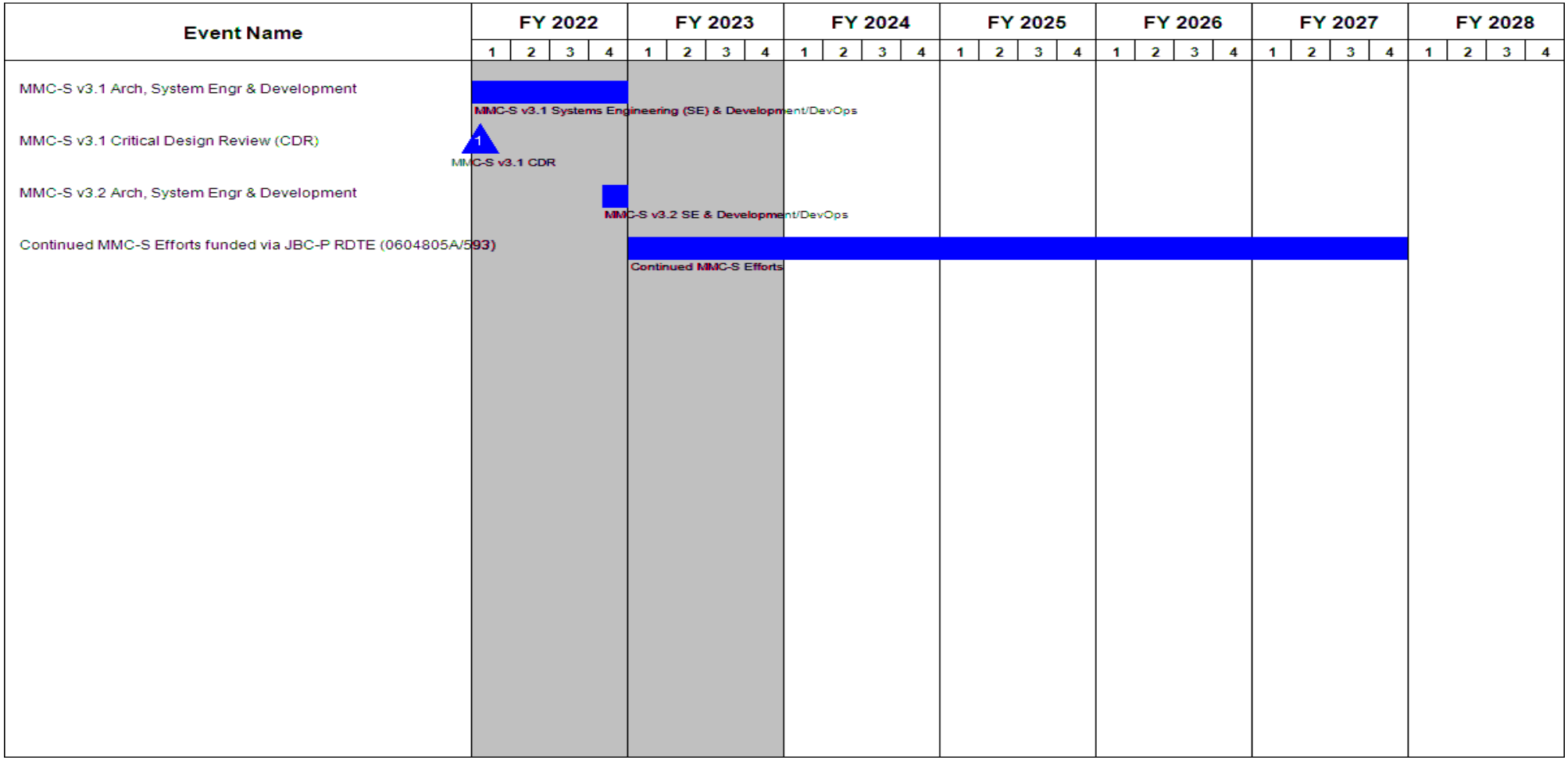


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

Note

Beginning with FY 2023, the Army has realigned MCE RDT&E funding for the development of the Mounted Mission Command - Software (MMC-S) from this line to the JBC- P RDTE line (PE 0604805A/Proj 593). These funds will support continued MMC-S development as part of the MMC Family of Systems (MMC FoS) strategy for modernizing and replacing the JBC-P capability. Consolidating the RDTE funding enables agile development and flexibility in support of the MMC FoS.

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MMC-S v3 Test & Integration	3	2017	4	2018
MMC-S v3.1 Arch, System Engr & Development	1	2019	4	2022
MMC-S v3 Customer Test	1	2019	1	2019
MMC-S Materiel Development Decision (MDD) Briefing	2	2020	2	2020
N-CFT's ITN 19 Experimentation Event	2	2020	2	2020
MMC-S v3.1 Critical Design Review (CDR)	1	2022	1	2022
MMC-S v3.2 Arch, System Engr & Development	4	2022	4	2022
Continued MMC-S Efforts funded via JBC-P RDTE (0604805A/593)	1	2023	4	2027

Note

Beginning with FY 2023, the Army has realigned MCE RDT&E funding for the development of the Mounted Mission Command - Software (MMC-S) from this line to the JBC- P RDTE line (PE 0604805A/Proj 593). These funds will support continued MMC-S development as part of the MMC Family of Systems (MMC FoS) strategy for modernizing and replacing the JBC-P capability. Consolidating the RDTE funding enables agile development and flexibility in support of the MMC FoS.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ6 / *TACTICAL ENHANCEMENT*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
EJ6: *TACTICAL ENHANCEMENT*	-	7.573	-	9.040	-	9.040	-	-	-	-	0.000	16.613
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Modernization Priority and supports the Army's strategy for Logistics Transport Convergence. Efforts are aligned to support the Network-Cross Functional Team capability set approach to achieve the network modernization strategy.

TROPO: Tactical Enhancement supports the evaluation and testing requirements for Troposcatter Transmission (TROPO) capabilities procured and fielded under the Signal Modernization (SIGMOD) funding line, B00010. TROPO will provide redundancy communications in a Satellite Denied environment by providing improved Line of Sight and Beyond Line of Sight (BLOS) radio systems. Enables Mission Command in a Satellite Denied environment by providing BLOS capability over longer ranges and at higher throughput than the current BLOS System. TROPO extends the network by utilizing a significantly reduced SWaP radio verses the current system. TROPO will enable Army units to reduce reliance on costly satellite bandwidth.

COMMAND POST NETWORKING: Enables Command Post networking capabilities by providing communications solutions to enable a more survivable Command Post against near peer advisories. The solutions will utilize advanced waveform and antenna improvements to decrease radio frequency detection and interception in the battlefield and will be integrated onto the appropriate platforms to increase Command Post survivability.

STS: The Sustainment Transport System (STS) is a data transport capability through satellite communications (SATCOM) and an integrated component of the Unified Network providing unclassified communications to U.S. Army sustainment units in their support to the Warfighter. STS provides network connectivity and enables a SATCOM pathway for logistics, financial management, personnel, and health service support data to be exchanged on the battlefield between multiple echelons and enterprise data sources. The STS provides critical connectivity on the battlefield where the Integrated Tactical Network (ITN) and other communication systems do not extend to dispersed and forward deployed sustainment units.

STS is comprised of one SATCOM System to enable Beyond Line of Sight (BLOS) communication and enterprise access. Each SATCOM System is accompanied by Line of Sight (LOS) radio systems to extend service to distant enclaves, and Wireless Network Access (Wi-Fi) to connect subscriber computers within a local enclave. STS will be acquired as three Programs of Record (PORs) beginning in FY23: STS SATCOM (ACAT II), STS Wi-Fi (ACAT II), and STS LOS (ACAT III). FY24 funding supports the execution of an Initial Test and Evaluation (IOT&E) for each STS POR in FY24.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Customer Test for TROPO systems	6.100	-	-
Description: Funds support TROPO Customer Test and associated support.			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Command Post Networking ***Description:*** Funds support Command Post Networking	1.473	-	-
Title: STS SATCOM Test and Evaluation ***Description:*** These funds will be used to conduct an Initial Test and Evaluation (IOT&E) of the STS SATCOM System in order to facilitate integration into the Unified Network. This Acquisition Strategy enables the integration of proven Commercial-Off-The-Shelf (COTS) capabilities into existing Tactical Network nodes to expand and enhance network capacity and user access. The STS SATCOM capability will be acquired as an ACAT II program to replace legacy equipment in the field as a distinct Major Capability Acquisition program, starting with a Milestone C Determination in 2QFY23. ***FY 2024 Plans:*** FY24 funding supports STS SATCOM Systems product development consisting of test assets that will be used during initial engineering tests and Army Test and Evaluation Command (ATEC) evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/ requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of STS SATCOM and will include Red Team Penetration Testing. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase is due to execution of IOT&E of the STS SATCOM System and any necessary modifications discovered during Operational Test.	-	-	3.500
Title: STS Wi-Fi Test and Evaluation ***Description:*** These funds will be used to conduct an Initial Test and Evaluation (IOT&E) of the STS Wi-Fi System in order to facilitate integration into the Unified Network. This Acquisition Strategy enables the integration of proven Commercial-Off-The-Shelf (COTS) capabilities into existing Tactical Network nodes to expand and enhance network capacity and user access. The STS SATCOM capability will be acquired as an ACAT II program to replace legacy equipment in the field as a distinct Major Capability Acquisition program, starting with a Milestone C Determination in 2QFY23. ***FY 2024 Plans:*** FY24 funding supports STS Wi-Fi System product development consisting of test assets that will be used during initial engineering tests and Army Test and Evaluation Command (ATEC) evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/requirements in the	-	-	2.640

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of STS Wi-Fi and will include Red Team Penetration Testing. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase is due to execution of IOT&E of the STS Wi-Fi System and any necessary modifications discovered during Operational Test.			
Title: STS LOS Test and Evaluation ***Description:*** These funds will be used to conduct an Initial Test and Evaluation (IOT&E) of the STS LOS System in order to facilitate integration into the Unified Network. This Acquisition Strategy enables the integration of proven Commercial-Off-The-Shelf (COTS) capabilities into existing Tactical Network nodes to expand and enhance network capacity and user access. The STS SATCOM capability will be acquired as an ACAT III program to replace legacy equipment in the field as a distinct Major Capability Acquisition program, starting with a Milestone C Determination in 2QFY23. ***FY 2024 Plans:*** FY24 funding supports STS LOS System product development consisting of test assets that will be used during initial engineering tests and Army Test and Evaluation Command (ATEC) evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of STS LOS and will include Red Team Penetration Testing. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase is due to execution of IOT&E of the STS LOS System and any necessary modifications discovered during Operational Test.	-	-	2.900
Accomplishments/Planned Programs Subtotals	7.573	-	9.040

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• B00010: *Signal Modernization Program*	140.036	167.058	161.585	-	161.585	200.354	201.162	201.292	200.467	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• BD3513: *CSS SATCOM*	73.110	60.879	56.804	-	56.804	67.703	68.014	68.180	68.405	0.000	463.095

Remarks

B00010: OPA funding line for Signal Modernization (SIGMOD): TROPO
BD3513: OPA funding line for CSS SATCOM: STS SATCOM, STS Wi-Fi, STS LOS

D. Acquisition Strategy

These funds will be used to conduct Initial Operational Tests and Evaluation (IOT&E) of STS SATCOM, STS LOS, and STS Wi-Fi Systems in order to facilitate integration into the Unified Network. This Acquisition Strategy enables the integration of proven Commercial-Off-The-Shelf (COTS) capabilities into existing Tactical Network nodes to expand and enhance network capacity and user access. The STS capabilities will be acquired as ACAT II and ACAT III programs to replace legacy equipment in the field as three distinct Major Capability Acquisition programs, starting with Milestone C Determinations in 2QFY23.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ6 / *TACTICAL ENHANCEMENT*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TROPO Customer Test	MIPR	ATEC : Aberdeen Proving Ground, MD	-	6.100	Apr 2022	-		-		-		-	0.000	6.100	-
Command Post Networking	C/Various	Various : Various	-	1.473	Sep 2022	-		-		-		-	0.000	1.473	-
STS SATCOM Test and Evaluation	MIPR	ATEC : Aberdeen Proving Ground, MD	-	-		-		3.500	Feb 2024	-		3.500	0.000	3.500	-
STS Wi-Fi Test and Evaluation	MIPR	ATEC : Aberdeen Proving Ground, MD	-	-		-		2.640	Feb 2024	-		2.640	0.000	2.640	-
STS LOS Test and Evaluation	MIPR	ATEC : Aberdeen Proving Ground, MD	-	-		-		2.900	Feb 2024	-		2.900	0.000	2.900	-
		Subtotal	-	7.573		-		9.040		-		9.040	0.000	16.613	N/A

Remarks

TROPO Customer Test will be a Soldier Touch Point (STP) in March 2023, to evaluate multiple industry solutions. This will be supported and instrumented by Army Test and Evaluation Command (ATEC).

STS SATCOM Test and Evaluation: FY24 funding supports STS SATCOM System product development consisting of test assets that will be used during initial engineering tests and Army Test and Evaluation Command (ATEC) evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of the STS SATCOM System and will include Red Team Penetration Testing.

STS Wi-Fi Test and Evaluation: FY24 funding supports STS Wi-Fi System product development consisting of test assets that will be used during initial engineering tests and ATEC evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of the STS Wi-Fi System and will include Red Team Penetration Testing.

STS LOS Test and Evaluation: FY24 funding supports STS Line of Sight System product development consisting of test assets that will be used during initial engineering tests and the full ATEC evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of the STS LOS System and will include Red Team Penetration Testing.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ6 / *TACTICAL ENHANCEMENT*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	7.573		-		9.040		-		9.040	0.000	16.613	N/A

Remarks

FY24 funding supports the Initial Tests and Evaluation (IOT&E) of STS SATCOM, Wi-Fi, and LOS systems to verify/validate the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). This funding will support the integration of STS to function as a System of Systems including satellite time on Ka, Ku, and X bands. Test and evaluation personnel, instrumentation, data collection, travel, and analysis will also be supported. This funding will also be used to conduct a cyber assessment of the STS programs and will include Red Team Penetration Testing.

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

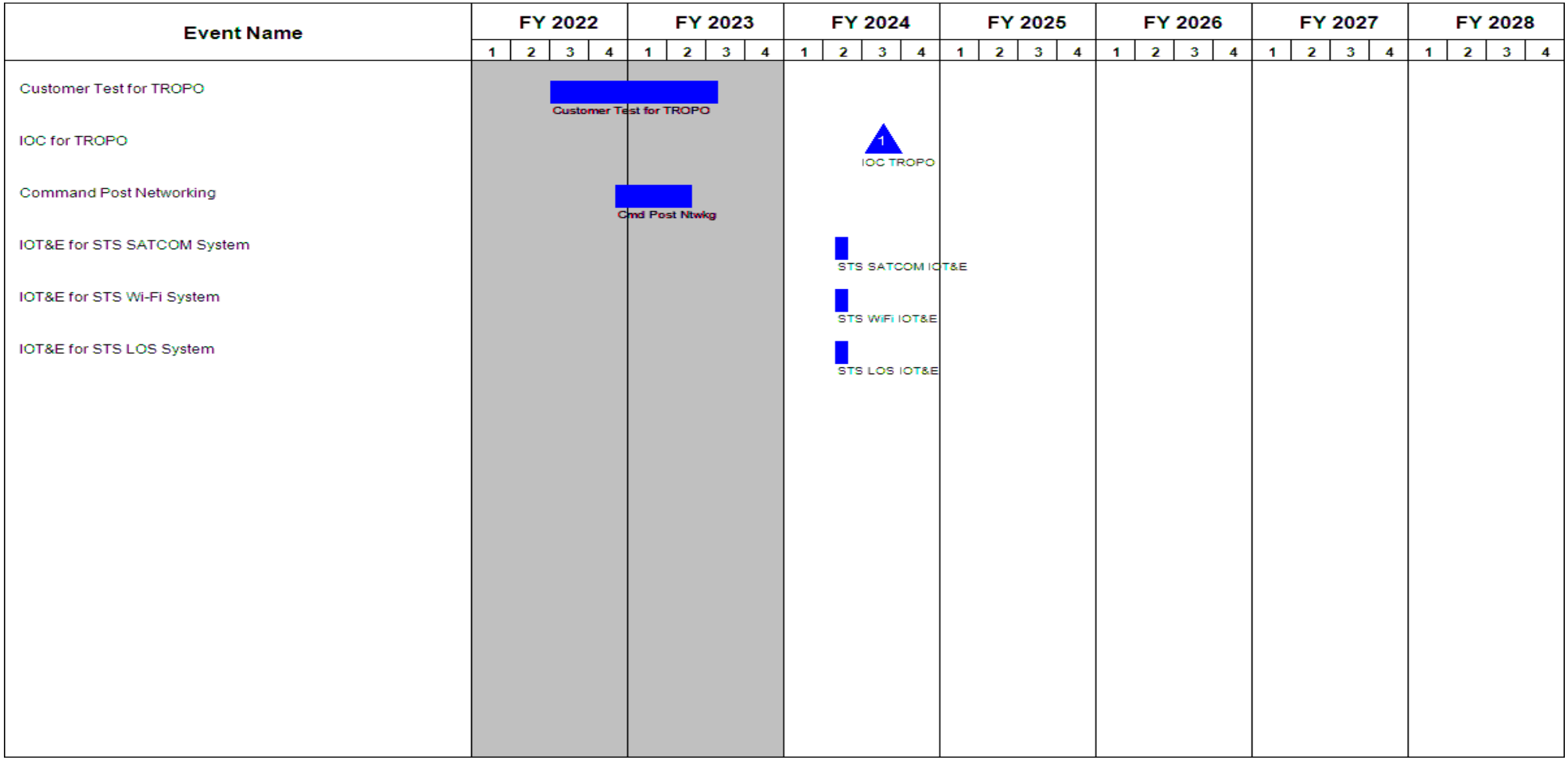


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Customer Test for TROPO	3	2022	3	2023
IOC for TROPO	3	2024	3	2024
Command Post Networking	4	2022	2	2023
IOT&E for STS SATCOM System	2	2024	2	2024
IOT&E for STS Wi-Fi System	2	2024	2	2024
IOT&E for STS LOS System	2	2024	2	2024

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army											Date: March 2023	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
EK9: *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	-	3.243	3.400	49.577	-	49.577	25.357	26.111	26.651	27.326	0.000	161.665
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project EK9, Tactical Network Operations Management (TNOM) funding increased from $3.400 million in FY 2023 to $49.577 million in FY 2024. The increase is partially the result of a funding realignment from the Unit Task Reorganization (UTR) 0604818A / EW3 funding line to TNOM. UTR 0604818A / EW3 prior year funding, per Congressionally authorized Middle Tier Acquisition (MTA) Authority, was leveraged for the Unified Network Operations (UNO) MTA Rapid Prototyping requirements to achieve necessary funding levels from FY 2019 - FY 2024. In FY 2024, the UTR 0604818A / EW3 funding is re-aligned to TNOM 0604818A / EK9 ($13.828 million).

In addition to the UTR 0604818A / EW3 re-alignment, additional program funding increases support the approved UNO Information Systems - Initial Capabilities Document (IS-ICD) requirements ($35.749 million) beginning in FY 2024. The increased funding supports the transition of the UNO prototyping activities towards development of fully integrated Unified Network (UN) capabilities in support of the UNO IS-ICD requirements.

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Modernization strategy and is the lynchpin of the Army Unified Network Plan.

Unified Network Operations (UNO) is foundational to Army network modernization efforts that enhance network security, resiliency, and data exchange, and to the service's Unified Network (UN) vision - which integrates and converges enterprise and tactical networks. UNO is a software-centric suite of applications, designed to replace and consolidate existing Network Operations (NetOps) tools. UNO applications when integrated, will provide a simple user-friendly capability for planning, managing, monitoring, configuring, and securing the network. UNO provides fully integrated Network and Enterprise Management Systems (NM/EMS) and Identity Credential Management (ICAM), an important tool in achieving a Zero Trust environment.

UNO management systems design and plan the network, including configuration, operation, and maintenance functions. The iterative UNO software will development approach will fully integrate cybersecurity capabilities and information dissemination management/content sharing (IDM/CS), including Army Zero Trust initiatives, to enable network mission command functions across the Enterprise and Tactical network environments.

UNO is a software-centric suite of applications, designed to replace and consolidate existing Network Operations (NetOps) tools that, when integrated, provide a simple, singular user-friendly capability for planning, managing, monitoring, configuring, and securing the UN. UNO provides fully integrated Network and Enterprise Management Systems (NM/EMS) to design and plan the network, including model and simulation, configuration, operation, and maintenance functions. UNO will develop and fully integrate cybersecurity capabilities and information dissemination management/content sharing (IDM/CS), including Army Zero Trust initiatives, to enable network mission command functions across the Enterprise and Tactical network environments.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

The UNO rapid prototyping phase provides initial software development and prototyping of UNO capabilities through Development, Security, and Operations (DevSecOps), leveraging Integrated Tactical Network (ITN) and Capability Set (CS) schedules to conduct Soldier Touch Points (STPs) and obtain user feedback used to improve UNO. The Army Acquisition Executive (AAE) Acquisition Decision Memorandum (ADM) signed 14 May 2019 authorized the use of a Middle Tier Acquisition (MTA) pathway for Rapid Prototyping from FY 2019 - FY 2024. The total cost of the UNO MTA Rapid Prototyping effort is $85 million RDT&E.

The UNO prototyping activities will transition to development of fully integrated UN capabilities in support of the UNO Information Systems - Initial Capabilities Document (IS-ICD), approved by the Army Future's Command (AFC) memorandum signed 28 June 2021. This phase of development expands UNO capabilities in support of a UN across Enterprise and Tactical networks and systems beginning in FY 2024. This phase of development will continue the DevSecOps approach for iterative software development, incorporating user feedback through STPs. In 3Q FY 2023, the program anticipates receiving authorization for initial software development of UNO IS-ICD requirements for tactical users to begin in FY 2024.

FY 2024 funding supports the completion of the UNO Middle Tier Acquisition (MTA) Rapid Prototyping phase with development of the UNO prototype v1.1 to support the overarching 2-year CS cycle for FY 2023. The development of the UNO prototype v1.1 builds on current prototype efforts to provide simplified NetOps capabilities across the tactical network, incorporating requirements stemming from CS initiatives and directed requirements.

Additionally, FY 2024 funding supports the initial development, testing, and integration of the UNO IS-ICD initial capability software release to support key components of the UN.

The total cost of the UNO Middle Tier of Acquisition effort is $85 million RDT&E from FY19 to FY24. The UNO is fully funded across the Future Years Defense Program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Management Services	-	-	2.466
Description: Management Services provides Program Management Office (PMO) activities (e.g., contract(s) management, acquisition efforts, costs, program management) to ensure the program maintains cost, schedule, and performance parameters. ***FY 2024 Plans:*** Management Services funds will provide for PMO support activities to the Unified Network Operations (UNO) program, to include contracts management, logistical support, program and business management functions. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Management Services funds were previously supported within the Unit Task Reorganization (UTR) 0604818A/EW3 funding line. Beginning in FY 2024, UTR funds have been realigned to TNOM 0604818A/EK9.			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Additionally, Management Services funds increased to provide additional PMO support activities to establish and manage development and integration contracts, provide additional logistical support and program management for development of UNO IS-ICD software releases.			
Title: Product Development	3.243	3.276	41.088
Description: Product Development provides software development of Unified Network Operations (UNO) capabilities. UNO Middle Tier Acquisition (MTA) Rapid Prototyping provides Network Planning and Network Management capabilities to support multiple weapon systems (e.g., tactical radios, Satellite Communications (SATCOM), Line of Sight (LOS), and Beyond Line of Sight (BLOS)). Network Planning includes the development of automated analysis processes, improved planning accuracy, and simplified configuration operations. Network Management includes the management, network status, and monitoring capabilities to allow users the ability to adjust the network to meet mission requirements. Network Planning and Network Management prototypes provide a consistent look and feel with embedded training. UNO IS-ICD requirements will expand UNO capabilities to provide the key components of the UN. These components include streamlined and enhanced Network Planning and Device Configuration and Network Management and Monitoring tools and, enhanced security and data exchange capabilities, including Zero Trust. These components provide standardized, tailorable, and scalable capabilities across the UN. ***FY 2023 Plans:*** FY 2023 funding will support UNO MTA Rapid Prototyping (RP) efforts of UNO via NetOps capabilities that build upon current efforts, expand those efforts to address CSA priorities, and include emerging capability requirements stemming from Network CFT initiatives and directed requirements. Funding will also support development, assessments, and deliveries of integrated capabilities to plan, install, operate, maintain, and secure the Army's end-to-end network in support of the commander's mission priorities. The UNO MTA RP will support prototyping of NetOps capabilities that enable command and control of the Tactical Network which will provide simplicity via a Common Operating Picture (COP), a flexible framework enabling rapid integration of future commercial/ government tools, and reliable network information to the Soldiers. The Network Planner and Network Management capabilities will support Network CFT initiatives and directed requirements utilizing the adapt and buy approach, as well as modernization, put forth by Army leadership. The UNO MTA RP will continue product development of the simplified Network Planner functionality, which enables automated NetOps capabilities to plan, manage and operate the Tactical Network via user workflows and reduces the cognitive burden to			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
the Soldiers. Will continue development of Radio Planning capabilities in order to plan and create configuration files for emerging Integrated Tactical Network (ITN) radios and waveforms. The UNO MTA RP will continue product development of the simplified Network Management functionality, which enables the management and troubleshooting of the network elements that comprise the Tactical Network by monitoring local nodes for network health status, performance, location, and security, in addition to displaying monitored data to the local operator. ***FY 2024 Plans:*** Product Development funds will provide for iterative software development of UNO capabilities. UNO MTA Rapid Prototyping product development includes software development of Network Planning and Network Management capabilities for the delivery of UNO prototype v1.1 software to support the overarching 2-year CS cycle for FY 2023 - FY 2024. Product Development supports the transition from rapid prototyping to fully integrated UNO capabilities in FY 2024 to support the UNO IS-ICD requirements. UNO IS-ICD product development includes software development of integrated Network and Enterprise Management Systems (NM/EMS), cybersecurity, and information dissemination management/content sharing (IDM/CS), including Zero Trust. UNO IS-ICD requirements will leverage and enhance existing prototypes to delivery NetOps tools/capabilities to develop and maintain critical situational awareness (SA) in all operational environments. NM/EMS software development results in designing, planning, configuration, operation, and maintenance functions (e.g., network and transports systems, cryptographic devices, servers, clients, end user devices, applications, and services). Cybersecurity capabilities will address cyber defense of the network that are threat agnostic; integrated with cyberspace operations, intelligence, and other information related capabilities to establish cyberspace defense in depth. IDM/CS provides information management planning; information discovery/delivery management; storage/cataloging of available information; and system administration functions. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Product Development funds for Network Management prototypes were previously supported within the Unit Task Reorganization (UTR) 0604818A/EW3 funding line. Beginning in FY 2024, UTR funds have been realigned to Tactical Network Operations Management (TNOM) 0604818A/EK9.			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Product Development funds increased to support the transition from rapid prototyping to software development of fully integrated UNO capabilities to meet UNO IS-ICD requirements beginning in FY 2024.			
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2023 Plans:*** FY 2023 SBIR / STTR Transfer. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY 2023 SBIR / STTR Transfer.	-	0.124	-
Title: Training Development ***Description:*** Training Development provides development of training materials in support of Unified Network Operations (UNO) Information Systems - Initial Capabilities Document (IS-ICD) requirements. Training development includes classroom training curriculums and subsequent training materials required to support Soldier training, allowing for maximum competency when operating UNO capabilities. ***FY 2024 Plans:*** Training Development funds will provide for development of training materials beginning in FY 2024 to support UNO IS-ICD requirements. Training development will support the iterative software development process and Development, Security, and Operations (DevSecOps) activities, including Soldier Touch Points (STPs) throughout the development cycle. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Training funds increased to support development of training curriculums and training materials required to support the DevSecOps approach, including STPs, throughout the software development cycle for UNO software releases.	-	-	1.509
Title: Test & Evaluation ***Description:*** Test & Evaluation provides funding to support testing and evaluation of Unified Network Operations (UNO) capabilities; ensures necessary certifications required to operate UNO capabilities across Army networks to support Department of Defense Information Networks (DODIN) operations are attained; ensures UNO capabilities are well integrated and interoperable across the Army's Unified Network (UN). ***FY 2024 Plans:*** Test & Evaluation funds will provide for the test and evaluation of UNO capabilities, acquiring the necessary certifications to operate UNO capabilities across Army networks for DODIN operations, and will ensure UNO capabilities are integrated and	-	-	4.514

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
interoperable across the Army's UN. This includes the Office of the Director, Operational Test and Evaluation (DOT&E) and Army Test and Evaluation Center (ATEC) support, test lab and equipment (hardware/software), development test activities (quarterly software testing, annual Formal Qualification Testing (FQT) and cybersecurity testing), operational Soldier Touch Points (STPs), cybersecurity and penetration testing during STPs, testing range coordination, network configuration, and test documentation. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Test & Evaluation funds increased to support testing and certification of fully integration Network and Enterprise Management System (NM/EMS) software, cybersecurity capabilities, and information dissemination management and content sharing (IDM/CS) to support UNO software releases.			
Accomplishments/Planned Programs Subtotals	3.243	3.400	49.577

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• EW3: *Unit Task Reorganization (UTR) Development*	9.003	13.799	0.000	-	0.000	-	-	-	-	Continuing	Continuing

Remarks

In accordance with National Defense Authorization Act (NDAA) funding policy for Middle Tier Acquisition (MTA) programs, Unified Network Operations (UNO) MTA Rapid Prototyping leverages funds from Unit Task Reorganization (UTR) 0604818A/EW3 and Tactical Network Operations Management (TNOM) 0604818A/EK9 to achieve its required funding levels.

UTR 0604818A/EW3 funding has been re-aligned to TNOM 0604818A/EK9 beginning in FY 2024.

D. Acquisition Strategy

Tactical Network Operations Management (TNOM) supports software development and integration of the Unified Network Operations (UNO) capabilities. Authority granted by the Army Acquisition Executive (AAE) Acquisition Decision Memorandum, signed 14 May 2019, approved the use of the Middle Tier Acquisition (MTA) pathway for Rapid Prototyping to develop and prototype the Network Operations (NetOps) solution. The UNO MTA Rapid Prototyping effort develops and delivers prototype capabilities to tactical users for experimentation, leveraging user feedback, to further refine UNO capability requirements. UNO MTA Rapid Prototyping follows the Army's Development, Security, and Operations (DevSecOps) approach to develop, assess, adjust, and deliver enhanced capabilities to the operational force in the shortest time possible, while mitigating cost, schedule, and performance risks early in the UNO program life cycle. In alignment with the MTA authority, UNO MTA Rapid Prototyping will continue to develop and deliver prototypes culminating with the development and testing of the UNO prototype v1.1 to support Capability Set (CS) FY 2023.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

On 28 June 2021, Army Futures Command (AFC) signed a memorandum approving the UNO Information Systems - Initial Capabilities Document (IS-ICD) which supports the Army Modernization Strategy to provide a NetOps framework that synchronizes and achieves a seamless end-to-end Unified Network (UN) from enterprise to tactical echelons enabling all warfighting functions. UNO IS-ICD requirements (Lower-Tier Tactical (LTT), Upper-Tier Tactical (UTT), Identity, Credential and Access Management (ICAM), Strategic, Installation, and Data Fabric) will serve as the key component of the UN construct to provide a standardized suite of tailorable and scalable NetOps tools/capabilities that are shared/common across the UN that increase simplicity, reduce critical operations task gaps, and create an affordability profile that is sustainable.

In 3Q FY 2023, the program anticipates receiving authorization for initial development of the UNO IS-ICD requirements for tactical users beginning in FY 2024. This strategy supports the transition of the UNO prototyping activities towards development of fully integrated Unified Network (UN) capabilities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Office	Various	Various : Various	-	-		-		2.466	Nov 2023	-		2.466	0.000	2.466	-
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.124		-		-		-	0.000	0.124	-
		Subtotal	-	-		0.124		2.466		-		2.466	0.000	2.590	N/A

Remarks

Management Services funds were previously supported within the Unit Task Reorganization (UTR) 0604818A/EW3 funding line. Beginning in FY 2024, UTR funds have been realigned to TNOM 0604818A/EK9.

Management Services funds increased to provide additional PMO support activities to establish and manage development and integration contracts, provide additional logistical support and program management for development of UNO IS-ICD software releases.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UNO Software Development	C/Various	Various : Various	13.287	3.243	Apr 2022	3.276	Jan 2023	41.088	Nov 2023	-		41.088	0.000	60.894	-
		Subtotal	13.287	3.243		3.276		41.088		-		41.088	0.000	60.894	N/A

Remarks

Product Development funds for Network Management prototypes were previously supported within the Unit Task Reorganization (UTR) 0604818A/EW3 funding line. Beginning in FY 2024, UTR funds have been realigned to Tactical Network Operations Management (TNOM) 0604818A/EK9.

Product Development funds increased to include the iterative software development to meet UNO IS-ICD requirements for the development of UNO software releases.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Training Development	Various	To Be Determined : To Be Determined	-	-		-		1.509	Mar 2024	-		1.509	0.000	1.509	-
		Subtotal	-	-		-		1.509		-		1.509	0.000	1.509	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Support costs increased to support development of training curriculums and training materials required to support the DevSecOps approach, including STPs, throughout the software development cycle for UNO software releases.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Test and Evaluation	Various	To Be Determined : To Be Determined	-	-		-		4.514	Apr 2024	-		4.514	0.000	4.514	-
		Subtotal	-	-		-		4.514		-		4.514	0.000	4.514	N/A

Remarks

Test & Evaluation funds increased to support testing and certification of fully integration Network and Enterprise Management System (NM/EMS) software, cybersecurity capabilities, and information dissemination management and content sharing (IDM/CS) to support UNO software releases.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.287	3.243		3.400		49.577		-		49.577	0.000	69.507	N/A

Remarks

Tactical Network Operations Management (TNOM) funding increased from $3.400 million in FY 2023 to $49.577 million in FY 2024 as a result of re-alignment of $13.828 million from the Unit Task Reorganization (UTR) 0604818A / EW3 funding line. Additionally, program funding increased by $35.749 million to support the Unified Network Operations (UNO) Information Systems - Initial Capabilities Document (IS-ICD) requirements beginning in FY 2024.

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

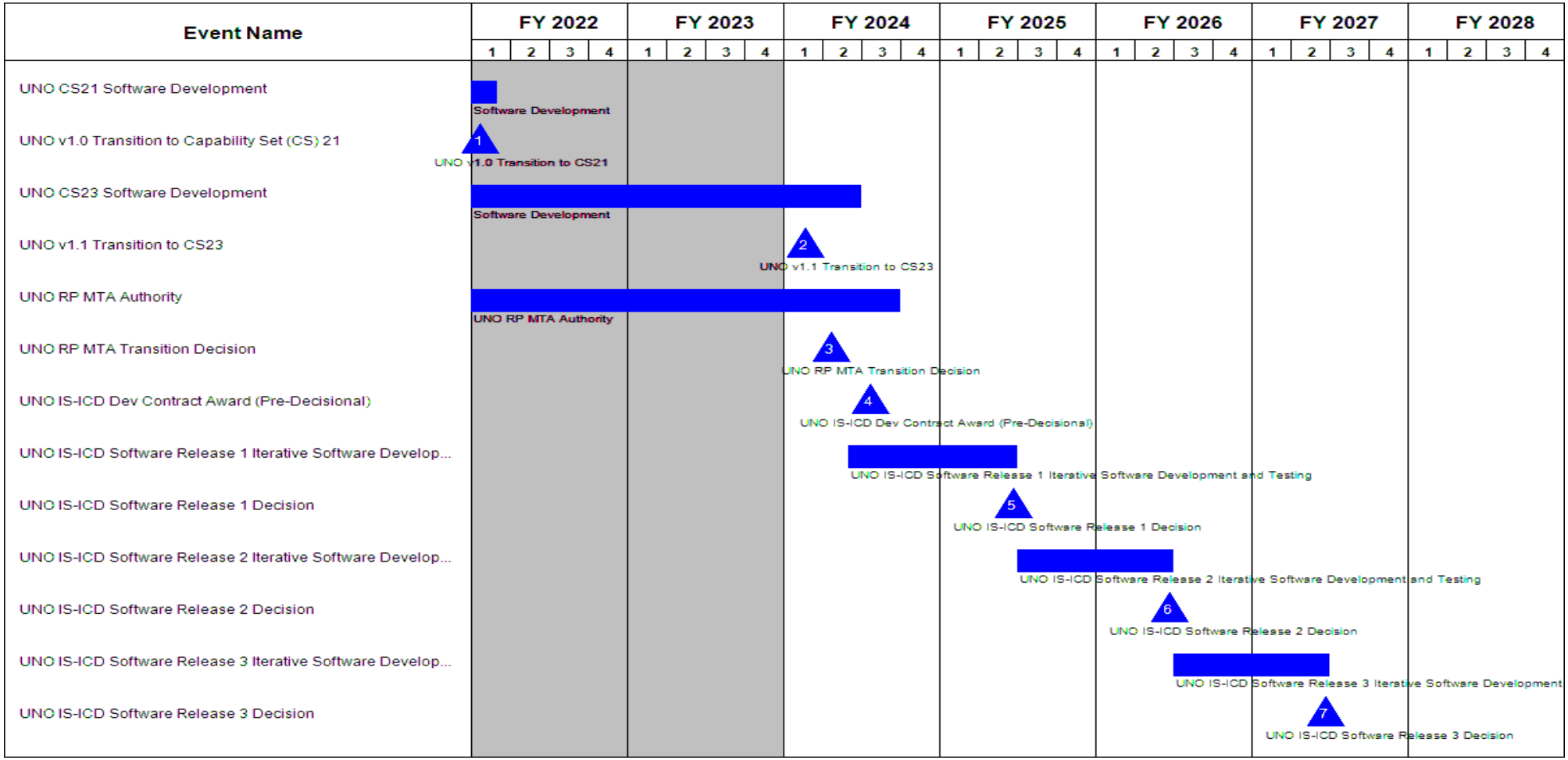


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
UNO IS-ICD Software Release 4 Iterative Software Develop...																												
UNO IS-ICD Software Release 4 Decision																												

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
UNO CS21 Software Development	3	2019	1	2022
UNO v1.0 Transition to Capability Set (CS) 21	1	2022	1	2022
UNO CS23 Software Development	2	2021	2	2024
UNO v1.1 Transition to CS23	1	2024	1	2024
UNO RP MTA Authority	3	2019	3	2024
UNO RP MTA Transition Decision	2	2024	2	2024
UNO IS-ICD Dev Contract Award (Pre-Decisional)	3	2024	3	2024
UNO IS-ICD Software Release 1 Iterative Software Development and Testing	2	2024	2	2025
UNO IS-ICD Software Release 1 Decision	2	2025	2	2025
UNO IS-ICD Software Release 2 Iterative Software Development and Testing	3	2025	2	2026
UNO IS-ICD Software Release 2 Decision	2	2026	2	2026
UNO IS-ICD Software Release 3 Iterative Software Development and Testing	3	2026	2	2027
UNO IS-ICD Software Release 3 Decision	2	2027	2	2027
UNO IS-ICD Software Release 4 Iterative Software Development and Testing	3	2027	2	2028
UNO IS-ICD Software Release 4 Decision	2	2028	2	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army											Date: March 2023	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
EQ8: *Mobile/Handheld Computing Environment (M/HHCE)*	-	4.919	5.298	7.549	-	7.549	6.284	5.291	5.347	5.408	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project EQ8 - The Common Operating Environment (COE) is an approved set of computing technologies and standards that enables secure and interoperable applications to be developed and executed rapidly across a variety of computing environments. The Mobile/Handheld Computing Environment (M/HHCE) is one of the six computing environments under the COE, which provides the standards for all Army hand-held applications enabling the use of common End User Devices by Soldiers, thereby eliminating redundant devices and reducing the Soldiers' load.

Nett Warrior (NW) and Integrated Visual Augmentation System (IVAS) are the instantiation of the M/HHCE and comply with the technical standards documented by the M/HHCE and provide the dismounted common computational platform for other products relevant to dismounted Soldiers. Through compliance with the M/HHCE, software applications from other programs are integrated with the NW and IVAS systems, reducing the need for duplicate hardware resulting in reduced Soldier Load. The M/HHCE is directly aligned to the Army Network Modernization Strategy Line of Effort (LOE) 1 (Unified Network). M/HHCE also supports the Army Network Modernization Strategy LOE 2 (Common Operating Environment). These efforts are aligned to the Army's Tactical Network Capability Set development and fielding plans by utilizing (1) interoperable data, message, and waveforms, (2) sensors and applications that enable operations across domains and automated tools to aid decision-making and (3) integration with Joint C4ISR and strike capabilities. NW leverages commercial smart phone devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness capability for use during combat operations. NW applied feedback from conventional and Special Operations units to procure and implement Secret and Secure But Unclassified (SBU) networking equipment for BCTs and the Security Force Assistance Brigades to enable faster, more flexible Mission Command data exchanges with Joint and Coalition forces while maintaining the existing integrated mission command capability with Mounted CE (e.g., Joint Battle Command - Platform (JBC-P)) system. NW uses Commercial-Off-The-Shelf (COTS) and Non-Developmental (NDI) computational & communication equipment to create a robust and flexible Integrated Tactical Network that enables faster and more accurate decision making in fights at the tactical level.

Requirements for the M/HHCE are established in the Army Requirements Oversight Council (AROC) approved COE Information Systems Initial Capability Document (IS ICD), the M/HHCE Requirements Definition Package (RDP), and the NW Capability Development Document in lieu of Capability Production Document. M/HHCE is a signature effort under the Network CFT (Common Operating Environment focused on dismounted Soldier). The Network CFT is one of the six Army modernization priorities per Army Modernization Strategy 2019. M/HHCE employs a Developmental Operations (DevOps) process to incrementally develop capability over time to satisfy requirements and meet fielding decisions. FY2024 funding will continue DevOps activities to incorporate new capability and enhancements based on user feedback, as well as lay the groundwork to support migration of third-party applications onto the M/HHCE software baselines. Additionally, FY 2024 funding provides for integration/test equipment and risk reduction events, as well as funding to integrate with the Enhanced Night Vision Goggle - Binocular (ENVG-B) and on-body processing.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Test and Evaluation	0.498	1.020	1.210
Description: Test and evaluation efforts include the planning and conduct of combined COE events with Command Post/Mounted Computing Environment, Software Acceptance Testing, System Integration Events, Risk Reduction Events, Security Penetration Testing and Operational Assessment like annual Army Expeditionary Warrior Experiment (AEWE) to gain Soldier Touch point feedback on new capabilities. ***FY 2023 Plans:*** Conduct NW test and 3rd party applications evaluation for technical verification at developmental test events and user verification. Support NW as a baseline JWA system including: Brigade level support, equipping, training, and spares for NW; conduct yearly environmental testing; and Information Assurance penetration prevention testing for new commercial smart devices, software and accessories. Support Army Expeditionary Warrior Experiment (AEWE) assessments to gain Soldier touch point feedback on emerging dismounted capabilities. ***FY 2024 Plans:*** Conduct NW test and 3rd party applications evaluation for technical verification at developmental test events and user verification. Support NW as a baseline ITN/mobile CE system including conduct yearly environmental testing and Information Assurance penetration prevention testing for new commercial smart devices, software, and accessories. Support annual DevOps operational assessments to gain Soldier touch point feedback on emerging dismounted capabilities. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 funding increase due to inflation.			
Title: Hardware and Software Integration and Evaluation for Capability Improvements	1.907	1.385	2.031
Description: Hardware and Software Integration and Evaluation for Capability Improvements ***FY 2023 Plans:*** Evaluate next End User Devices (EUD) and associated hardware components to stay aligned with commercial and Army evolving requirements. Provide NW software / hardware updates to support incorporation of 3rd party software applications onto NW EUD platform, Army Interoperability Certification (AIC) and cyber security testing. Support DARPA integration and transition of future technologies. Update software to M/HHCE standards as revised to maintain compliance with COE. Start DARPA SHARE multi-level security integration on EUD. Integrate PANTHER (SBIR) capability within NW to provide non-GPS based approach for determining approximate position location information. Supports development, evaluation, and integration efforts for robotics controllers configurable to the mobile handheld computing environment. ***FY 2024 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Evaluate next End User Devices (EUD) and associated hardware components to stay aligned with commercial and Army evolving requirements. Provide NW software / hardware updates to support incorporation of 3rd party software applications onto NW EUD platform and cyber security testing. Support Defense Advanced Research Projects Agency (DARPA) integration and transition of future technologies. Update software to M/HHCE standards as revised to maintain compliance with COE. Continue DARPA SHARE network server reduction infrastructure transition capability. Continue integration of PANTHER (SBIR) into NW, PANTHER leverages terrain features and EUD camera to provide a non-GPS based approach for determining a user's location. Continue integration and certification testing of ISW Multi-Mode Body Area Network chipsets/packaging within NW system. Supports development, evaluation, and integration efforts for robotics controllers configurable to the mobile handheld computing environment. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase in FY24 funding due to ramp-up of effort relating to ISW Multi-Mode Body Area Network integration and test; introduction of auxiliary processor for AI/ML leader decision-making tool and heads-up display testing quantities			
Title: Software Development & Integration	2.267	1.962	3.290
Description: Funding is provided for the following efforts. ***FY 2023 Plans:*** Evaluate next generation NW / ATAK map engines and Operating System (OS) trade studies software development efforts with NW. Update NW Software Development Kit (SDK) with new functionality. Continue software upgrades to ITN component software based on security and operational requirements. Continue incorporating the Army's Common Operating Environment (COE) Cross-Cutting Capabilities into NW software to support CS25 ITN. Continue development of NW's next generation Service Oriented Architecture and Tactical Assault Kit plug-ins. Complete NW tactical cloud IL5 ecosystem (SBU) to IL6 (to handle up to secret) integration efforts to allow for over the air updates to fielded NW systems for STIG compliance, OS, application updates and remote troubleshooting. Complete transition from S&T, in conjunction with IVAS program, of Leader Planning & Decision Tools (Semi-Automated Route planning tool) and Remote Aerial Sensing capabilities to further integrate RF Sensing network traffic and visualizing radio frequency emitters in the battlespace NW & IVAS from CDC-Soldier Center Sensored Soldier Science and Technology TTA. ***FY 2024 Plans:*** Evaluate next generation NW / Android Team Awareness Kit (ATAK) map engines and Operating System (OS) trade studies software development efforts with			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
NW. Update NW Software Development Kit (SDK) with new functionality. Continue software upgrades to ITN component software based on security and operational requirements. Continue incorporating the Army's Common Operating Environment (COE) Cross-Cutting Capabilities and Mobile HH RDP into NW software to support Capability Set (CS) 25 ITN. Complete NW tactical cloud IL5 ecosystem (SBU) to IL6 (to handle up to secret) integration efforts to allow for over the air updates to fielded NW systems for Security Technical Implementation Guide (STIG) compliance, OS, application updates and remote troubleshooting. Support for emerging Mobile Handheld Computing Environment (CE) RDP (Requirements Definition Package) supporting CS25-CS29 next iteration of software requirements. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase in FY24 funding due to increase in FTEs; inflation; emerging Mobile Handheld CE RDP (Requirements Definition Package) (supporting CS25-29) next iteration software requirements.			
Title: Conduct SEPM Support to NW ***Description:*** Conduct Systems Engineering and Program Management Support to Nett Warrior ***FY 2023 Plans:*** Continue to conduct government systems / software engineering and program management support for NW program. Will collect input from Soldiers to improve NW and IVAS size, weight, power, fightability, safety and effectiveness via surveys. Will manage system configuration, and execute test, development and integration planning including investigation and analysis of emerging innovative commercial technologies to reduce the size, weight, power, cost, and increase NW and IVAS, and ITN functionality. ***FY 2024 Plans:*** Continue to conduct government systems / software engineering and program management support for NW program. Will collect input from Soldiers to improve NW and IVAS size, weight, power, lethality, safety and effectiveness via surveys. Will manage system configuration, and execute test, development and integration planning including investigation and analysis of emerging innovative commercial technologies to reduce the size, weight, power, cost, and increase NW, IVAS and ITN functionality. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase in FY24 funding due to inflation.	0.120	0.298	0.677
Title: M/HHCE Governance ***Description:*** Development of the M/HHCE standards and M/HHCE governance.	0.127	0.440	0.341

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
FY 2023 Plans: Continue to provide Mobile Handheld Computing Environment (M/HHCE) governance and standards development for external program integration with NW and IVAS to eliminate separate handheld devices and reduce Soldier load. Maintain compliance with overarching COE standards to support CS25 ITN. ***FY 2024 Plans:*** Continue to provide Mobile Handheld Computing Environment (M/HHCE) governance and standards development for external program integration with NW and IVAS to eliminate separate handheld devices and reduce Soldier load. Maintain compliance with overarching COE standards to continue support of CS25 ITN. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease in FY24 funding due to reduction in labor.			
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638. ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC §638. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC §638.	-	0.193	-
Accomplishments/Planned Programs Subtotals	4.919	5.298	7.549

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• R80501: *Ground Soldier System*	150.244	124.953	167.129	-	167.129	177.429	173.950	174.046	174.024	Continuing	Continuing

Remarks

D. Acquisition Strategy

To capitalize on commercial industry's investment in advanced smart device technology as well as innovation and changes within Army, Nett Warrior (NW) and IVAS require annual RDT&E funding for integration and evaluation of new technology. Through this process and at low cost, the Army is able to integrate and evaluate for combat utility the hundreds of millions spent in product development by the major commercial device manufactures. The NW program provides situational awareness and mission command to dismounted combat leaders through secure smart devices, a central power source, cables and the Integrated Tactical Network (ITN). NW system is currently the central element within the Mobile Handheld Computing Environment (Mobile HHCE) that other programs host their software. The Mobile HHCE

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

is one of the six computing environments within the Army Common Operating Environment. NW and IVAS fund development and evaluation of new technology and software integration through a combination of competitively awarded contracts and Other Transaction Authorities (OTAs). Various existing follow on procurement contracts are utilized to procure a combination of COTs and GOTs equipment to include supporting services. Now in production, NW seeks operational feedback and uses the DevOps process to identify and implement new capabilities. M/HHCE standards are updated annually under the M/HHCE governance process.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering & Program Management Support	Various	Various : Various	8.151	0.120	Sep 2022	0.298	Sep 2023	0.677	Sep 2024	-		0.677	Continuing	Continuing	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.193	Mar 2023	-		-		-	Continuing	Continuing	-
		Subtotal	8.151	0.120		0.491		0.677		-		0.677	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware/Software Integration & Evaluation	Various	Various : Various	14.696	1.907	Jun 2022	1.385	Apr 2023	2.031	Apr 2024	-		2.031	Continuing	Continuing	-
MHH Governance	MIPR	Various : Various	10.645	0.127	Jan 2022	0.440	Jan 2023	0.341	Jan 2024	-		0.341	Continuing	Continuing	-
		Subtotal	25.341	2.034		1.825		2.372		-		2.372	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development and Integration	Various	Various : Various	6.981	2.267	Jul 2022	1.962	Apr 2023	3.290	Apr 2024	-		3.290	Continuing	Continuing	-
		Subtotal	6.981	2.267		1.962		3.290		-		3.290	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Various : Various	7.364	0.498	Jun 2022	1.020	Jul 2023	1.210	Jul 2024	-		1.210	Continuing	Continuing	-
		Subtotal	7.364	0.498		1.020		1.210		-		1.210	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	47.837	4.919		5.298		7.549		-		7.549	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

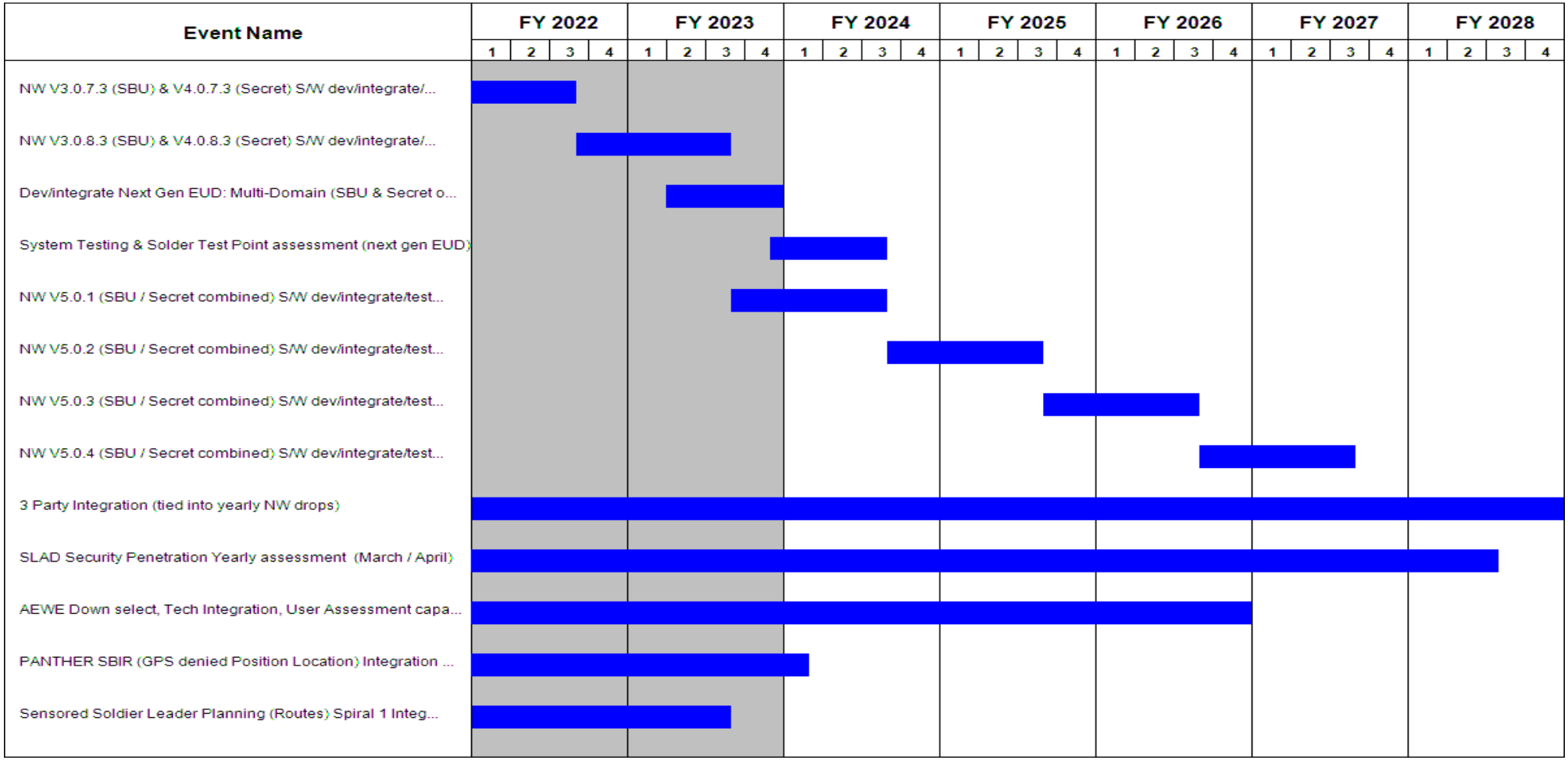


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

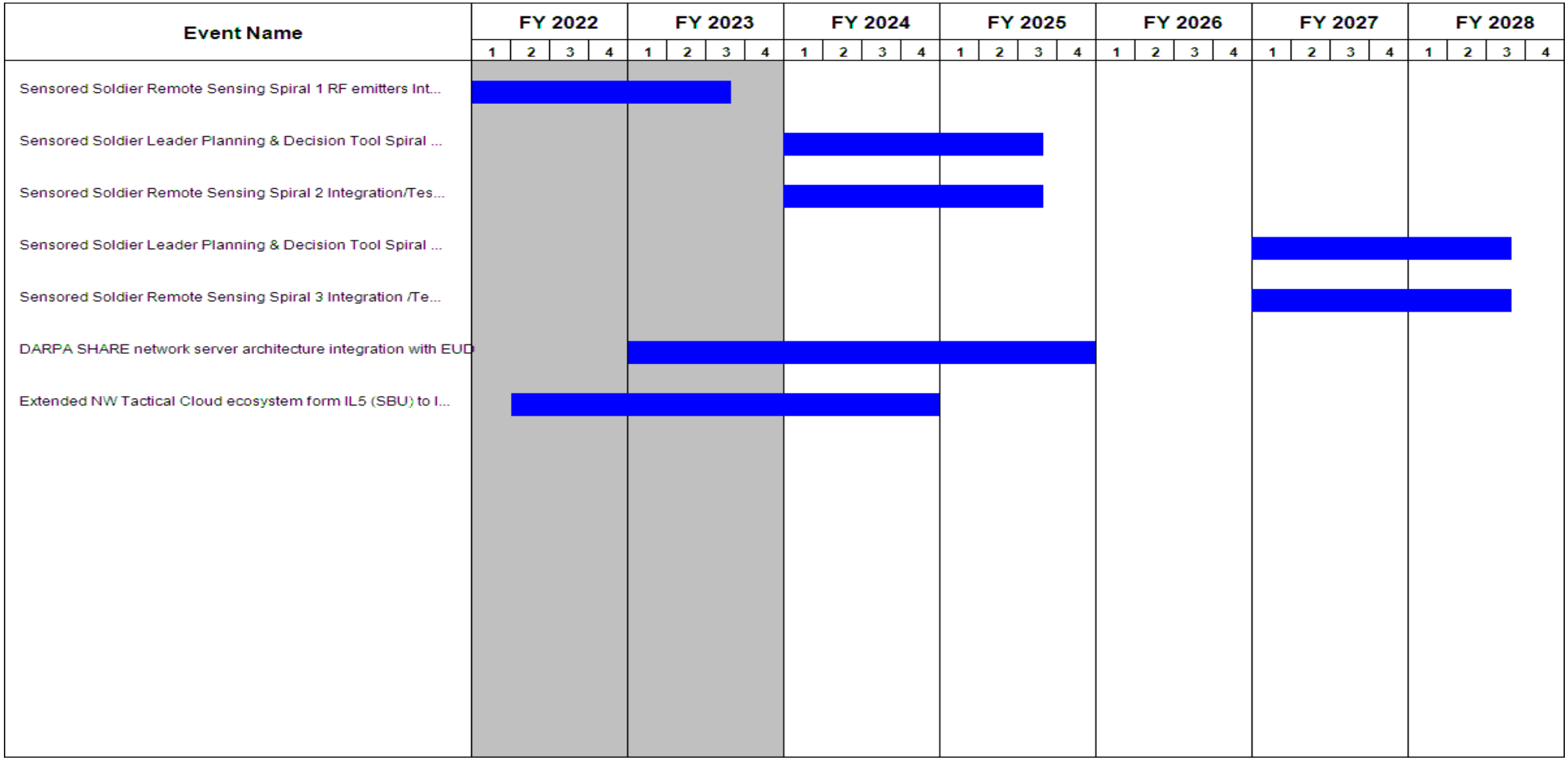


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NW V3.0.5.3 (SBU) & V4.0.5.3 (Secret) S/W dev/integrate/test (M/HHCE & CS21 ITN)	1	2020	3	2020
Galaxy S20 TE EUD & Case (support part CS21 & CS23): Development / integration	2	2020	4	2020
NW System Testing & Solder Test Point assessment (S20 device)	1	2021	1	2021
NW Integration & test events with SBCT to support ITN assessment	4	2020	4	2021
NW V3.0.6.3 (SBU) & V4.0.6.3 (Secret) S/W dev/integrate/test (M/HHCE & CS21 ITN	3	2020	3	2021
NW V3.0.7.3 (SBU) & V4.0.7.3 (Secret) S/W dev/integrate/test (M/HHCE & CS23 ITN)	3	2021	3	2022
NW V3.0.8.3 (SBU) & V4.0.8.3 (Secret) S/W dev/integrate/test (M/HHCE & CS23 ITN)	3	2022	3	2023
Dev/integrate Next Gen EUD: Multi-Domain (SBU & Secret one device) (CS25 & CS27)	2	2023	4	2023
System Testing & Solder Test Point assessment (next gen EUD)	4	2023	3	2024
NW V5.0.1 (SBU / Secret combined) S/W dev/integrate/test (M/HHCE & CS25 ITN)	3	2023	3	2024
NW V5.0.2 (SBU / Secret combined) S/W dev/integrate/test (M/HHCE & CS25 ITN)	3	2024	3	2025
NW V5.0.3 (SBU / Secret combined) S/W dev/integrate/test (M/HHCE & CS27 ITN)	3	2025	3	2026
NW V5.0.4 (SBU / Secret combined) S/W dev/integrate/test (M/HHCE & CS27 ITN)	3	2026	3	2027
3 Party Integration (tied into yearly NW drops)	1	2020	4	2028
SLAD Security Penetration Yearly assessment (March / April)	2	2021	3	2028
AEWE Down select, Tech Integration, User Assessment capability (Yearly)(May-Feb)	3	2020	4	2026
Integration Dismounted Assured PNT Gen 1.x with NW	1	2020	4	2021
PANTHER SBIR (GPS denied Position Location) Integration w/ NW & Soldier Touch Pt	2	2021	1	2024
Sensored Soldier Leader Planning (Routes) Spiral 1 Integr /Testing (NW/IVAS tie)	1	2022	3	2023
Sensored Soldier Remote Sensing Spiral 1 RF emitters Integr/Testing (NW/IVAS tie	1	2022	3	2023
Sensored Soldier Leader Planning & Decision Tool Spiral 2 Integr/Testing (NW/IVA	1	2024	3	2025
Sensored Soldier Remote Sensing Spiral 2 Integration/Testing (NW/IVAS tie)	1	2024	3	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Sensored Soldier Leader Planning & Decision Tool Spiral 3 Integr/Testing (NW/IVA	1	2027	3	2028
Sensored Soldier Remote Sensing Spiral 3 Integration /Testing (NW/IVAS tie)	1	2027	3	2028
Intra Soldier Wireless (ISW) software routing manager on EUD	1	2021	3	2021
DARPA SHARE network server architecture integration with EUD	1	2023	4	2025
Extended NW Tactical Cloud ecosystem form IL5 (SBU) to IL6 (Secret)	2	2022	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) ER9 / *Expeditionary Army Command Post*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
ER9: *Expeditionary Army Command Post*	-	46.080	31.463	28.870	-	28.870	19.192	14.706	8.079	4.816	0.000	153.206
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Command Post Integrated Infrastructure (CPI2) is executed in a two Increment approach. Increment 0 focused on development and test of a CPI2 capability on the Family of Medium Tactical Vehicles (FMTV) at Brigade Combat Team level and Division Main. In addition, Increment 0 performed experimentation with a Stryker based Mobile Command Group (MCG). Increment 0 entered Milestone C, 18 June 2022. Increment 1 expands the CPI2 capability from FMTV to formation appropriate vehicle platforms for development of the Stryker Mission Command Platform (MCP), Armored Multi-Purpose Vehicle (AMPV) MCP, Joint Light Tactical Vehicle (JLTV) MCP, and Command Post Support Vehicle (CPSV).

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network, Modernization Priority 1. This funding line is directly aligned to the Army Network Modernization Strategy Line of Effort (LOE) #4 Command Post.

The Command Post Integrated Infrastructure (CPI2) program addresses the Army requirements for more mobile, scalable, interoperable, and agile command posts. Currently fielded command posts are too large and take too long to setup and teardown making them vulnerable to near peer detection and targeting technologies. By integrating mission command warfighting functions onto formation appropriate vehicle platforms, a dispersed command post construct will enable the battle staff to blend in with the overall maneuver formation while giving the commander the ability to synchronize the close fight on the move. This dispersed mobile command post consists of MCP, CPSV and MCG. The MCP is a formation appropriate vehicle that provides digital workstations for all mission command warfighting functions. The CPSV is the hub of the dispersed Command Post; it hosts mission command servers, radios, local area network components and a secure wireless capability. Specific to Corps/Div, CPI2 will provide a MCG hosted on formation appropriate platforms for Corps and Div. The MCG provides Commanders and Staff with the ability to employ high priority functions while on the move.

Increment 0 focused on prototype development for MCP and CPSV capability for two Brigade Combat teams (BCT's), a Division Main, and a Division MCG. Increment 0 capability design and development for the CPI2 MCP and CPSV on the FMTV platforms and shelter systems provides mobile capability and increased survivability to the command post. The MCP, CPSV, and Division Main/MCG prototypes were evaluated and tested via 3 Operational Assessments (OA) which provided soldier feedback and helped to inform the Increment 0 Milestone C decision (approved 18 June 2022) for a limited production set of 5 BCTs.

Increment 1 initiated at Milestone B (ADM signed 12 June 2021); expands on the development and prototype/testing of the MCP/CPSV/MCG from FMTV to the formation-appropriate platforms (Stryker, AMPV and JLTV) that were not designed in Increment 0. These combined capabilities will enable the Army to employ command posts across the operational spectrum, from early entry to major combat operations that will resolve current command post issues with set up and tear down, survivability, mobility, suitability and footprint. The prototypes will be tested and will inform platform production decisions to align with CPI2 fielding's in future years.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

FY 2024 funding will execute Increment 1 efforts for the design, development, prototyping, and testing of CPI2 MCP/CPSV capabilities on formation appropriate platforms for Stryker, AMPV and JTLV. Funding also provides for acquisition of equipment to support product development, platform vehicle testing, logistical support and program management.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Product Development ***Description:*** Includes the costs for design/integration/fabrication and prototyping of MCP, CPSV, and MCG platforms. These prototypes address capability gaps identified in current Army Command Post formations. Also includes equipment and ancillary items necessary to prototype a distributed CPI2 capability. ***FY 2023 Plans:*** FY 2023 funds executed the design engineering, and prototype development of Mission Command Platforms and Command Post Support Vehicles for formation appropriate platforms (APMV, JLTV, Stryker) through their existing platform contracts. ***FY 2024 Plans:*** FY 2024 funds support the Inc 1 design, engineering and prototype development of Mission Command Platforms and Command Post Support Vehicles for formation appropriate platforms (Stryker, AMPV and JLTV) through their existing platform contracts. Includes costs for development of a Towable Expeditionary Shelter Family of Systems for support to Division and Corps echelon. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease is attributed to the last year of product development of the Stryker MCP, AMPV MCP, JLTV MCP, and JLTV CPSV.	36.056	18.714	17.252
Title: Support Costs ***Description:*** Program costs for training and development of data packages. ***FY 2023 Plans:*** Funding supports updates necessary to technical data packages, training for test events, as well as maintenance for the platforms in the CPI2 Division formation. ***FY 2024 Plans:*** Funding supports Increment 1 updates to technical data packages, training for test events, as well as support to the Soldier Touch Points at CPI2 Division formation. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase aligned to the requirement for Stryker Tech Data Package, new operator's and maintenance manuals, Soldier Touch points at CPI2 Division formation and continued experimentation.	3.472	3.175	3.800
Title: Systems Test and Evaluation	1.964	4.646	5.023

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Description: Costs required for test activities to inform CPI2 solution set. ***FY 2023 Plans:*** Conduct test events for formation appropriate vehicles (APMV, JLTV). Conduct Developmental Testing sessions to determine the preparedness and investigate potential issues for the Limited User Test (LUT) event. Conduct the Safety Testing to receive Material Release and support the LUT Event on FMTV based MCP, CPSV to inform a Milestone C in FY24. ***FY 2024 Plans:*** Conduct Increment 1 test events for formation appropriate vehicles (Stryker, APMV, JLTV) to obtain approval for production orders. Conduct the Safety Testing on the FMTV A2 Vehicle platform. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** System test and evaluation increase is aligned to number of test activities for the Stryker, AMPV, and JLTV designs, as well as the Safety Testing on the FMTV A2 vehicle platform.			
Title: Program Office Management ***Description:*** Contractor/Matrix Labor support and program travel. ***FY 2023 Plans:*** Contract and Matrix personnel to support CPI2 in achieving mission requirements to include managing multiple design/prototyping efforts, test events and training. ***FY 2024 Plans:*** Contract and Matrix personnel to support CPI2 Increment 1 in achieving mission requirements to include managing multiple design/prototyping efforts, test events and training. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease is aligned to shift to Increment 1 production.	4.588	3.780	2.795
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638. ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC §638. ***FY 2023 to FY 2024 Increase/Decrease Statement:***	-	1.148	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Funding transferred in accordance with Title 15 USC §638.			
Accomplishments/Planned Programs Subtotals	46.080	31.463	28.870

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• B29801: *CPI2*	49.410	60.455	78.512	-	78.512	105.739	90.936	90.979	91.057	Continuing	Continuing

Remarks

CPI2 OPA funding will support a contract with Industry to produce Mission Command Platform, Command Post Support Vehicle and Mobile Command Group capability. Funds will support acquisition of components (Voice, Wireless, Power Solutions, Heating/Cooling, and Shelter Systems) to issue to prime contract as government furnished equipment for production of the CPI2 capability. The CPI2 OPA line does not include any funding for procurement of the FMTV, Stryker, AMPV or JLTV vehicle platforms, that funding resides with the programs of record for each vehicle platform.

D. Acquisition Strategy

The CPI2 Materiel Development Decision (MDD) Acquisition Decision Memorandum (ADM) was signed on 21 June 2018 and directed CPI2 to be executed in two Increments. Increment 0 designed and delivered an initial capability of CPI2 for 5 Brigade Combat Teams (BCT) in alignment with a signed Directed Requirement (Dec 2017); utilizing the Army Family of Medium Tactical Vehicles (FMTV) as the primary mover. Increment 1 will expand on Inc 0 to deliver CPI2 to a select 86 Army units and 1 training set per approved Capability Development Document (CDD) signed April 2020. Inc 1 expands CPI2 capability beyond FMTV to Stryker, AMPV and JLTV vehicle platforms.

Increment 0 transitioned from design and development to production at a successful MS C on 18 June 2022. The RDTE efforts for Increment 0 (FY19-22) developed a Mission Command Platform (MCP) and a Command Post Support Vehicle (CPSV) hosted on the Family of Medium Tactical Vehicles (FMTV) platforms and associated shelter systems to generate a more mobile, survivable command post. The capability for the MCP and CPSV was tested via Operational Assessments (OA) with two Brigade Combat Team (BCTs) in May and July 2021, and one Division Main in Oct 2021. The results from these events provided data necessary to inform an Increment 0 Milestone C decision, which authorized the production of FMTV based MCP and CPSV for 5 BCTs. The Division Main and MCG serve to provide a baseline for user inputs for any future CPI2 CDD updates. Any production decisions for Division and MCG would be addressed in the Increment 1 Milestone C (2QFY24).

Increment 1 will execute requirements of the CDD to replace designated legacy command post systems at Corps, Division, Brigades, Battalions and select Multi-Functional Support Brigades (MFSB). The approved Increment 1 Milestone B (Acquisition Decision Memorandum signed June 2021) authorized CPI2 to begin prototype development not addressed in Increment 0; specifically for design and test of Stryker, JLTV and AMPV vehicle platforms for formation appropriate MCP, CPSV and MCG. CPI2 will award funds on existing Programs of Record (PoR) managed contracts for the design/development of these platforms. CPI2 will fund testing of the CPI2 capability on the Stryker, AMPV and JLTV platforms in coordination with their program offices to ensure that the platforms can go into production for alignment with CPI2 future fielding schedule.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

The Increment 1 Milestone C decision (2QFY24) will initiate LRIP production and fielding of CPI2 FMTV based platforms and shelter systems. CPI2 will pursue a full and open award to contract with industry for the engineering, installation and production of the MCP/CPSV/MCG solution for vehicle platforms and shelter systems. An operational test will be conducted to assess CPI2 on the FMTV platform prior to a Full Rate Production decision. CPI2 will be responsible for delivering CPI2 equipment to the vendor for installation. Vehicle platforms will be supplied to CPI2; funded and provided by the existing Army vehicle PoR contracts. Due to the varying timelines for development of the formation appropriate platforms (Stryker, AMPV, JLTV); each PoR will assess the CPI2 solution via their individual Functional Qualification Test (FQT). Upon successful test, the CPI2 product office will go forward to the CPI2 Milestone Decision Authority (MDA) to request authority to expand the CPI2 capability to Stryker, AMPV and JLTV platforms executed via Engineering Change Proposal (ECP) to the CPI2 installation vendor.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SETA Support	MIPR	Booz Allen Hamilton : Aberdeen Proving Ground, MD	-	2.163	Feb 2022	1.780	Dec 2022	1.185	Dec 2023	-		1.185	Continuing	Continuing	Continuing
Matrix Support	MIPR	Various : Aberdeen Proving Ground, MD	5.971	2.425	Nov 2021	2.000	Dec 2022	1.610	Dec 2023	-		1.610	Continuing	Continuing	Continuing
Civilian Labor	Allot	PM MC : Aberdeen Proving Ground MD	0.108	-		-		-		-		-	0.000	0.108	-
SETA Support	MIPR	CACI : Aberdeen Proving Ground, MD	4.584	-		-		-		-		-	0.000	4.584	-
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		1.148		-		-		-	0.000	1.148	-
		Subtotal	10.663	4.588		4.928		2.795		-		2.795	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Stryker MCP Design/ Development	Allot	PM SBCT : Detroit, MI	4.300	22.825	May 2022	11.315	Jan 2023	10.103	Jan 2024	-		10.103	Continuing	Continuing	Continuing
AMPV MCP Design/ Development	Allot	PM AMPV : Detroit Arsenal, MI	-	3.989	Mar 2022	5.826	Jan 2023	2.949	Jan 2024	-		2.949	Continuing	Continuing	Continuing
JLTV MCP/CPSV Design/ Development	Allot	PM JLTV : Detroit , MI	-	3.060	Apr 2022	1.573	Jan 2023	1.900	Jan 2024	-		1.900	Continuing	Continuing	Continuing
TESS Design/ Development	Allot	PdM FSS : Natick, MA	1.755	3.532		-		2.300	Nov 2023	-		2.300	0.000	7.587	-
Ancillary Items	MIPR	Various : Various	5.813	0.864	Dec 2021	-		-		-		-	0.000	6.677	-
CPI2 Core Kits	Various	Multiple : Multiple	14.359	1.786	Dec 2021	-		-		-		-	0.000	16.145	-
Engineering Changes	Option/ FFP	ELBIT : Ft.Worth, Texas	5.440	-		-		-		-		-	0.000	5.440	-
Rigid Wall Shelter Design	MIPR	CCDC-C5ISR : APG, MD	1.483	-		-		-		-		-	0.000	1.483	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) ER9 / *Expeditionary Army Command Post*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Vehicle Platforms	Allot	PdM MPVS : Detroit Arsenal, MI	10.042	-		-		-		-		-	0.000	10.042	-
ISO Containers	Allot	BERG : Spokane, WA	11.100	-		-		-		-		-	0.000	11.100	-
		Subtotal	54.292	36.056		18.714		17.252		-		17.252	Continuing	Continuing	N/A

Remarks

1) CPI2 funds existing contracts managed by Stryker, AMPV and JLTV to execute design/development/vehicle prototyping.
2) Towable Expeditionary Shelter Systems (TESS) design and development in support of Inc 1 will begin in FY24.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Tech Manuals/Training Development Packages	Various	Various : Various	3.988	0.970	May 2022	1.320	Dec 2022	1.381	Dec 2023	-		1.381	Continuing	Continuing	Continuing
Division Main Soldier Touch Point & Experimentation	Option/ Various	Various : Ft Bliss, TX	-	2.502	Dec 2021	1.855	Dec 2022	2.419	Dec 2023	-		2.419	0.000	6.776	-
		Subtotal	3.988	3.472		3.175		3.800		-		3.800	Continuing	Continuing	N/A

Remarks

1) Tech Manuals increase is driven by Stryker, AMPV and JLTV platform required updates to user manuals, maintainer manuals, and technical data packages supporting CPI2 design.
2) Soldier Touch Point: Ongoing experimentation to understand how CPI2 can be incorporated at the Division; to include evaluation of a MCG. Ensures continuous feedback in the try, buy and assess model for Division Main and Division MCG.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Test and Evaluation	MIPR	Various : Various	4.670	1.964	May 2022	4.646	Feb 2023	5.023	Nov 2023	-		5.023	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) ER9 / *Expeditionary Army Command Post*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			4.670	1.964		4.646		5.023		-		5.023	Continuing	Continuing	N/A

Remarks

1) System Test and Evaluation increase is aligned to number of test activities for the Stryker, AMPV and JLTV designs, as well as the Safety Testing on the FMTV A2 vehicle platform. These events inform future production decisions to produce the platforms in support of CPI2 fielding's.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	73.613	46.080		31.463		28.870		-		28.870	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

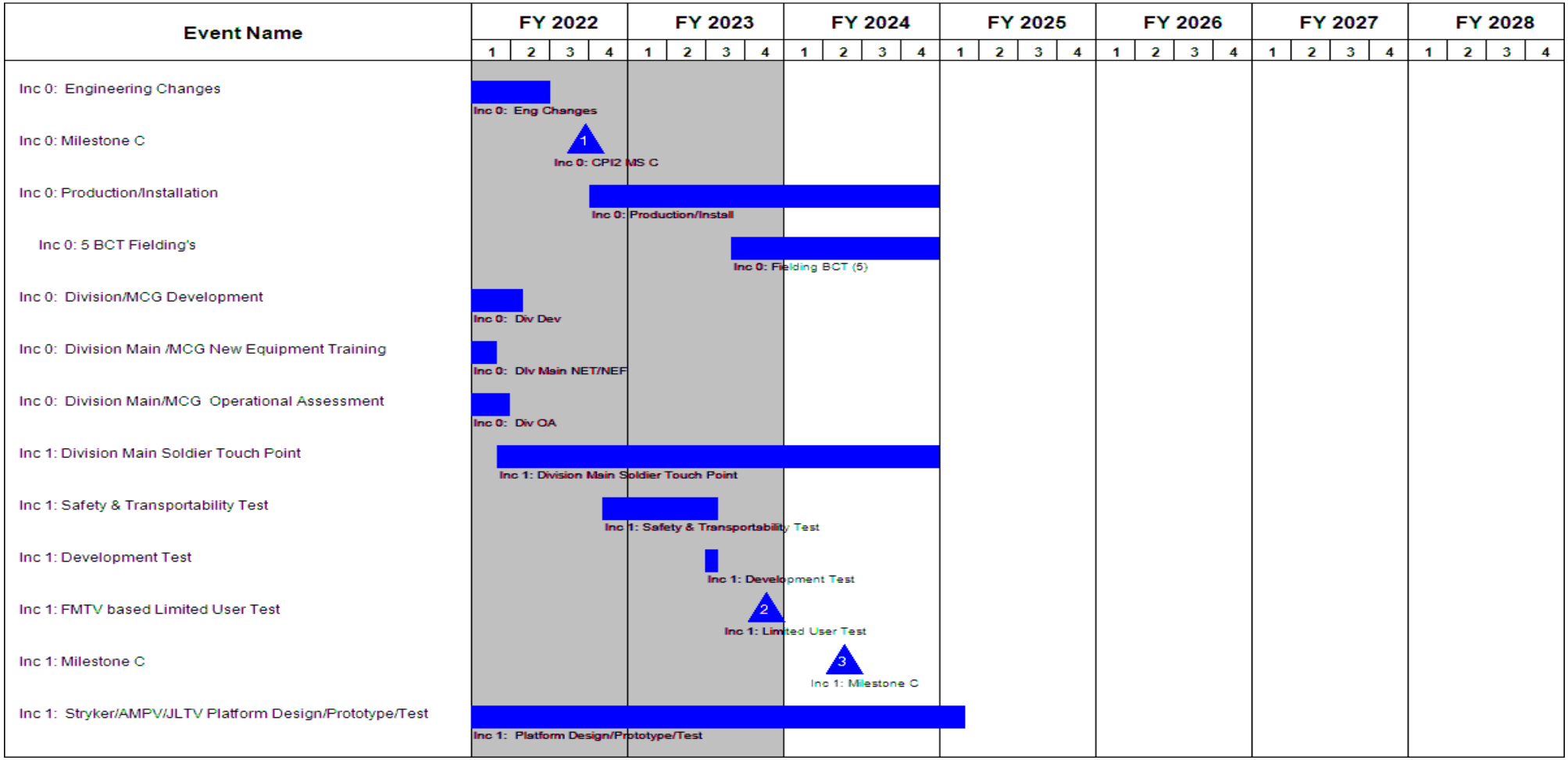
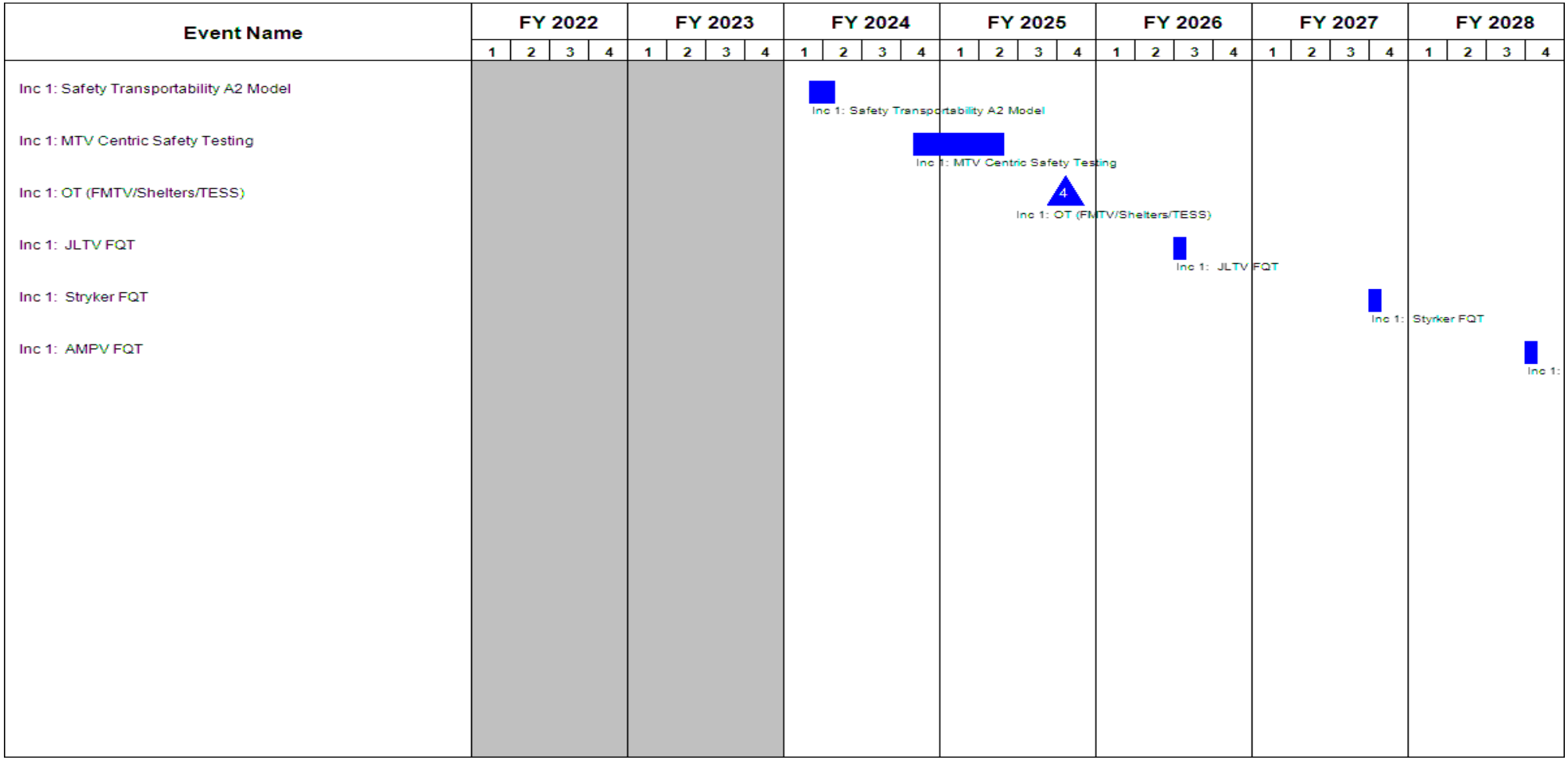


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*



Note

Increment 0 production/installation and fielding are OPA activities. These efforts do not consume RDTE funding.

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Command Post Directed Requirement Signed	1	2018	1	2018
CPI2 MDD	3	2018	3	2018
Inc 0: MS A	2	2019	2	2019
Inc 0: Product Development (BCT Unit) -Gov't Design	2	2019	2	2021
Inc 0: BCT Unit Safety Release Testing	4	2020	2	2021
Inc 0: BCT Operational Assessment	4	2021	4	2021
Inc 0: Product Development (BCT Unit)- Elbit Design	4	2019	3	2021
Inc 0: BCT Safety Release Testing	1	2021	2	2021
Inc 0: BCT Operational Assessment	3	2021	3	2021
Inc 0: Engineering Changes	4	2021	2	2022
Inc 0: Milestone C	3	2022	3	2022
Inc 0: Production/Installation	4	2022	4	2024
Inc 0: 5 BCT Fielding's	3	2023	4	2024
Inc 0: Division/MCG Development	4	2019	1	2022
Inc 0: Div/MCG Safety Release Test	3	2021	4	2021
Inc 0: Division Main /MCG New Equipment Training	4	2021	1	2022
Inc 0: Division Main/MCG Operational Assessment	1	2022	1	2022
Inc 1: Division Main Soldier Touch Point	1	2022	4	2024
Inc 1: Capablity Development Document Approved	3	2020	3	2020
Inc 1: Milestone B Brief	3	2021	3	2021
Inc 1: Safety & Transportability Test	4	2022	3	2023
Inc 1: Development Test	3	2023	3	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Inc 1: FMTV based Limited User Test	4	2023	4	2023
Inc 1: Milestone C	2	2024	2	2024
Inc 1: Stryker/AMPV/JLTV Platform Design/Prototype/Test	3	2021	1	2025
Inc 1: Safety Transportability A2 Model	1	2024	2	2024
Inc 1: MTV Centric Safety Testing	4	2024	2	2025
Inc 1: OT (FMTV/Shelters/TESS)	4	2025	4	2025
Inc 1: JLTV FQT	3	2026	3	2026
Inc 1: Stryker FQT	4	2027	4	2027
Inc 1: AMPV FQT	4	2028	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army												Date: March 2023
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) EW3 / *Unit Task Reorganization (UTR) Development*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
EW3: *Unit Task Reorganization (UTR) Development*	-	9.003	13.799	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project EW3, Unit Task Reorganization (UTR) funding decreased from $13.814 million in FY 2023 to $0 million in FY 2024 as a result of realignment of funds to the Tactical Network Operations and Management (TNOM) 654818 / EW3 funding line beginning in FY 2024.

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Modernization strategy in support of a Unified Network.

Unit Task Reorganization (UTR) funding line supports the Army Network Plan Framework objective to deliver a Standards Based Network Architecture. This will enable modernizing the Mission Command Network through the coordination of a common set of network operations (NetOps) tools and infrastructure development supporting the unit communication staff's ability to conduct Network Planning, Network Provisioning, and Network Management, aligning with the Army's plan for a unified network. UTR provides an integrated planning tool suite; tools and technologies to provision and automate delivery of configurations; and replace stove-piped management systems with integrated tools providing detailed views of the network and its components. The UTR funding line, in accordance with the National Defense Authorization Act (NDAA) policy for Middle Tier Acquisition (MTA) funding, is leveraged by the Unified Network Operations (UNO) MTA Rapid Prototyping program to achieve its required funding levels. The total cost of the UNO MTA Rapid Prototyping program is $84.352 million RDT&E from FY 2019 - FY 2024.

The UTR funding has been re-aligned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Network Management	8.720	12.812	-
Description: UTR introduces improvements to the way the network is managed, reducing closed management systems and replacing them with integrated tools that provide a consolidated, as well as detailed, view of the network and its components. The UTR software provides integrated management solutions for Transportable Tactical Command Communications (T2C2) and Scalable Class of Unified Terminals (SCOUT) systems, Satellite Transport Terminals (STTs), Tactical Communications Node - Lite (TCN-L) systems. UTR also provides initial Tactical Radio Integration Kit (TRIK) management interfaces. UTR leverages Integrated Tactical Network (ITN) and Capability Set (CS) schedules to conduct Soldier Touch Points (STPs) and demonstrate network management prototype capabilities to gain user feedback to improve network management software capabilities.			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
- Complete delivery of vendor neutral Application Programming Interface (API) that supports network health status across warfighting applications and S6 tools & services as well as communication across various services. - Continue development of network components that support centralized data, security, and information exchanges, enabling Signal Soldier activities. - Implementation of Bandwidth efficient & NSA approved Over the Network and Over the Air capabilities to provision and reconfigure tactical radios that support Integrated Visual Augmentation System (IVAS), Hand Held Computing Environment (HH CE) & Mounted Computing Environment (MCE). - Continue product development of Network Management functionality enabling the ability to manage and troubleshoot the network devices that comprise the Tactical Network, monitor nodes for network health status, performance, location, and security, in addition to displaying monitored data to the local operator. Extend management interfaces for services (Network Manager & Battalion (BN) and Below Manager (INB2)). - Continue development of the Tactical radio planner to include planning for additional waveforms, Demand Assigned Multiple Access (DAMA), Satellite Communications (SATCOM), Planning. - Integration of Tactical Network Initialization & Configuration (TNIC) Initialization Process through Initialization Tool Suite. - Continue development of SATCOM planner as replacement for the Tactical Network Toolkit (TNT) Network Management System (NMS) planner for SATCOM systems targeting deployment in CS 23. - Continue development of consolidated Satellite Access Requests & receipt of Satellite Access Authorizations. - Analysis and studies of network planning/management/cybersecurity capabilities. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Beginning in FY 2024, UTR RDTE funding has been realigned to UNO 654818 / EK9.			
Title: System of Systems Engineering and Portfolio Management ***Description:*** Systems engineering and program management support to include development and maintenance of the NetOps architecture, Systems Engineering Plan, Risk Management Plan, Rapid Prototyping, IPT Management, Requirements Engineering, Integrated Master Schedule, and budget formulation and execution.	0.283	-	-
Title: Program Management ***Description:*** The UNO Program Office will support the continuation of NetOps component development. The UNO Program Office will also support the transition of UNO MTA RP to a suitable acquisition pathway for software capability fielding in FY2024 to meet Unified Network requirements. ***FY 2023 Plans:***	-	0.483	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
The UNO Program Office will support the continuation of NetOps component development. The UNO Program Office will also support the transition of UNO MTA RP to a suitable acquisition pathway for software capability fielding in FY2024 to meet Unified Network requirements. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Beginning in FY 2024, UTR RDTE funding has been realigned to UNO (PE 0604818A, Proj EK9).			
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638. ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC §638. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC §638.	-	0.504	-
Accomplishments/Planned Programs Subtotals	9.003	13.799	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• EK9: *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	3.243	3.400	49.577	-	49.577	25.357	26.111	26.651	27.326	0.000	161.665

Remarks

In accordance with the National Defense Authorization Act (NDAA) policy for Middle Tier Acquistion (MTA) programs, Unified Network Operations (UNO) MTA Rapid Prototyping leverages funds from Unit Task Reorganization (UTR) 654818 / EW3 and Tactical Network Operations Management (TNOM) 654818 / EK9 to achieve its required funding levels.

The UTR funding has been re-aligned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.

D. Acquisition Strategy

Unit Task Reorganization (UTR) is an overarching effort that supports the establishment of a standards-based network architecture and integration of requirements across multiple efforts in the tactical network. UTR resources are applied directly to current products which are modified through Engineering Change Proposals and Modified Work Orders to comply with network standards. This enables current systems to share the information, reducing time and task for soldiers as well as new systems to access the network. Efforts are enduring to react to evolving prioritization of requirements.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

The UTR funding has been realigned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EW3 / *Unit Task Reorganization (UTR) Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	TBD	Various : Various	-	-		0.483	Nov 2022	-		-		-	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.504		-		-		-	0.000	0.504	-
		Subtotal	-	-		0.987		-		-		-	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Network Management	C/FFP	Various : TBD	47.001	8.720	Jan 2022	12.812	Nov 2022	-		-		-	Continuing	Continuing	Continuing
		Subtotal	47.001	8.720		12.812		-		-		-	Continuing	Continuing	N/A

Support ($ in Millions)

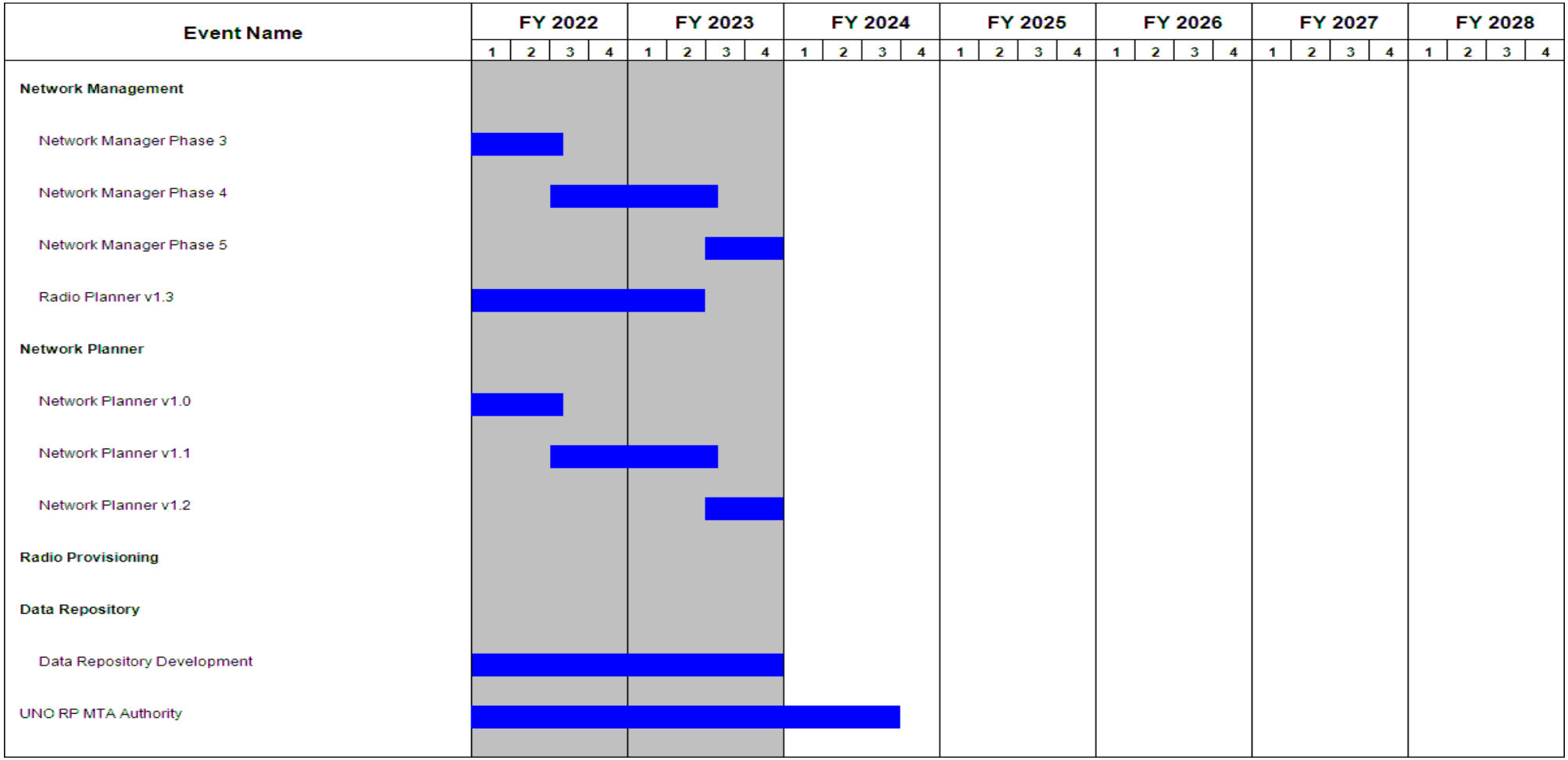
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System of Systems Engineering and Portfolio Management	C/CPAF	Various : APG MD	3.873	0.283	Feb 2022	-		-		-		-	0.000	4.156	-
		Subtotal	3.873	0.283		-		-		-		-	0.000	4.156	N/A

	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	50.874	9.003		13.799		-		-		-	Continuing	Continuing	N/A

Remarks

Beginning in FY 2024, UTR RDTE funding has been realigned to UNO (PE 0604818A, Proj EK9).

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*



Note

The UTR funding has been realigned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Network Management	1	2019	3	2024
Network Manager Phase 3	2	2021	3	2022
Network Manager Phase 4	3	2022	3	2023
Network Manager Phase 5	3	2023	4	2023
Radio Planner	1	2019	2	2021
Radio Planner v1.3	1	2021	2	2023
Network Planner	1	2020	4	2023
Network Planner v1.0	3	2021	3	2022
Network Planner v1.1	3	2022	3	2023
Network Planner v1.2	3	2023	4	2023
Network Provisioning	1	2019	4	2021
Radio Provisioning	1	2019	4	2022
Radio Provisioner x.1	1	2021	4	2021
Data Repository	1	2019	3	2024
Data Repository Development	1	2021	4	2023
Radio Standards version x.1	4	2020	4	2021
UNO RP MTA Authority	3	2019	3	2024

Note

The UTR funding has been re-aligned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.