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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604805A / <i>Command, Control, Communications Systems - Eng Dev</i>
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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	-	19.372	44.993	34.214	-	34.214	33.899	33.914	34.264	34.646	0.000	235.302
593: <i>Joint Battle Command - Platform (JBC-P)</i>	-	19.372	44.993	34.214	-	34.214	33.899	33.914	34.264	34.646	0.000	235.302

Note

In FY 2023, the Army combined the RDT&E funding from the Mounted Computing Environment (MCE) (PE 0604818/Proj EJ5) and Joint Battle Command - Platform (JBC-P) (PE 0604805A/Proj 593) lines. The RDT&E funding covers modernizing the JBC-P capability, which will be provided through the Mounted Mission Command (MMC) Family of Systems (FoS). MMC FoS includes Blue Force Tracking 3 (BFT-3) work under MMC-Transport (MMC-T) and MMC-Software (MMC-S), which was previously funded under Project EJ5.

A. Mission Description and Budget Item Justification

This Program Element (PE) is directly aligned to the Army Network Modernization Strategy Line of Effort (LOE) 2. Specifically, JBC-P/MMC FoS supports LOE 2 by utilizing and providing:

- Interoperable data, message, and waveforms
- Integration with Joint Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, and Reconnaissance (C5ISR) and strike capabilities
- Sensors and applications that enable operations across domains
- Critical Interoperability features that bridge the communications gap between the Command Post Computing Environment and Mobile/ Handheld Computing Environment (Nett Warrior)
- Data mediation, message format translation, and waveform exchanges across all computing environments (CEs) delivering improved information dissemination
- Mounted Common Operating Picture 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 programs
- Mounted platform data sensor collection, processing, and disbursement applications that enable and enhance WfFs on the battlefield
- Foundational cross-cutting capabilities that integrate with Joint C5ISR and strike capabilities

The JBC-P and MMC FoS programs are the cornerstone of Joint Forces command and control situational awareness and communications, and include networks that enable the movement of data and provide a secure BFT capability in both platforms and command posts. This capability provides soldiers and commanders a near real-time map-based view of the battlefield, reducing fratricide and populating the Tactical Common Operating Picture. Modernization of the JBC-P capability will be accomplished via the MMC FoS approach to maximize development flexibility and support incremental JBC-P capability improvements over time. The MMC FoS addresses the BFT-3 effort under the MMC-T program and the next generation software development under MMC-S (previously captured in the MCE funding line); planning is underway for future MMC FoS programs to address compute and store requirements.

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The MMC-T program continues development of the next generation BFT capabilities (BFT-3), including electronic warfare (EW) and cyber resiliency using a modular open systems approach, developing the next generation BFT-3 transceiver and encryption device, which will provide the Warfighter with multiple avenues to transmit voice/data information while increasing EW and cyber resiliency.

The MMC-S program continues next generation software development that facilitates convergence of WfF applications into the MCE infrastructure, as well as developing smart routing processes that will use the BFT-3 network, along with leveraging all available networks in the platform. MMC-S will enhance existing JBC-P capability and prepare the software to host applications (apps) developed by external programs to provide robust WfF capabilities within the MCE.

FY 2024 funding supports MMC-T development and systems engineering efforts to continue the transceiver and encryption device prototype development. MMC-T development activities will include the integration of the BFT waveform and terrestrial radio line of sight waveform on the transceiver; integration of the transceiver and encryption device to each mounted platform; and interoperability with the BFT-2 Satellite Network Control Center (SNCC) and Satellite Ground Station (SGS).

FY 2024 funding supports MMC-S software and infrastructure development to facilitate convergence of WfF applications and smart routing capabilities as part of the next MMC-S release. MMC-S activities will include development of the MCE infrastructure to host WfF apps; continued DevOps and a Developmental Test; an Operational Test to support a Fielding Decision; an Army Interoperability Certification Test; and interface development to Integrated and Firing Platforms.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	20.107	40.038	34.936	-	34.936
Current President's Budget	19.372	44.993	34.214	-	34.214
Total Adjustments	-0.735	4.955	-0.722	-	-0.722
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	5.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.735	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.722	-	-0.722
• FFRDC Transfer	-	-0.045	-	-	-

Change Summary Explanation

Decreased funding to support higher Army priorities.

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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 0604805A / <i>Command, Control, Communications Systems - Eng Dev</i>				Project (Number/Name) 593 / <i>Joint Battle Command - Platform (JBC-P)</i>			
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
593: <i>Joint Battle Command - Platform (JBC-P)</i>	-	19.372	44.993	34.214	-	34.214	33.899	33.914	34.264	34.646	0.000	235.302
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project supports the JBC-P and MMC FoS programs that are the cornerstone of Joint Forces command and control situational awareness and communications, and include networks that enable the movement of data and provide a secure BFT capability in both platforms and command posts. This capability provides soldiers and commanders a near real-time map-based view of the battlefield, reducing fratricide and populating the Tactical Common Operating Picture. Modernization of the JBC-P capability will be accomplished via the MMC FoS approach to maximize development flexibility and support incremental JBC-P capability improvements over time. The MMC FoS addresses the BFT-3 effort under the MMC-T program and the next generation software development under MMC-S (previously captured in the MCE funding line); planning is underway for future MMC FoS programs to address compute and store requirements.

The MMC-T program continues development of the next generation BFT capabilities (BFT-3), including electronic warfare (EW) and cyber resiliency using a modular open systems approach, developing the next generation BFT-3 transceiver and encryption device, which will provide the Warfighter with multiple avenues to transmit voice/data information while increasing EW and cyber resiliency.

The MMC-S program continues next generation software development that facilitates convergence of WfF applications into the MCE infrastructure, as well as developing smart routing processes that will use the BFT-3 network, along with leveraging all available networks in the platform. MMC-S will improve upon existing JBC-P capability and prepare the software to host applications (apps) developed by external programs to provide robust WfF capabilities within the MCE.

FY 2024 funding supports MMC-T development and systems engineering efforts to continue the transceiver and encryption device prototype development. MMC-T development activities will include the integration of the BFT waveform and terrestrial radio line of sight waveform on the transceiver; integration of the transceiver and encryption device to each mounted platform; and interoperability with the BFT-2 Satellite Network Control Center (SNCC) and Satellite Ground Station (SGS).

FY 2024 funding supports MMC-S software and infrastructure development to facilitate convergence of WfF applications and smart routing capabilities as part of the next MMC-S release. MMC-S activities will include development of the MCE infrastructure to host WfF apps; continued DevOps and a Developmental Test; an Operational Test to support a Fielding Decision; an Army Interoperability Certification Test; and interface development to Integrated and Firing Platforms.

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

	FY 2022	FY 2023	FY 2024
Title: Software/Systems Engineering	16.457	35.359	22.815
Description: Perform Software/Systems Engineering needed to develop BFT-3 capabilities, applications and services, to include, but not limited to conducting engineering studies, architecture development (network and software), system analyses,			

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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / <i>Command, Control, Comm unications Systems - Eng Dev</i>	Project (Number/Name) 593 / <i>Joint Battle Command - Platform (JBC-P)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>technical readiness assessments, technical interchange/exchange meetings/events, and development of related reports and other deliverables.</p> <p>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), including 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.</p> <p>FY 2023 Plans: Funds continue to support software/systems engineering and development of the BFT-3 capability (MMC-T). Specifically, it covers the BFT-3 transceiver and encryption device development contracts. Support will include; the integration of the BFT modular waveform, enabling competition by allowing third party transceiver manufacturers to access and interoperate with the existing BFT network, to include the BFT-2 SNCC and SGS, the integration of a resilient line of sight waveform on a software defined radio, the integration of the transceiver and encryption devices to each mounted platform, and an upgrade of the Waveform/Network Virtualization for the BFT network to support the new modular waveform and line of sight waveform. A CDR will also be conducted for the transceiver and encryption device development.</p> <p>Funds complete software development/systems engineering and incorporation of MCE (MMC-S) baseline capabilities (version 3.1) focused on infrastructure, core utilities, backwards compatibility, and WfF application convergence into a holistic system of systems, while ensuring subsystems function together in accordance with program requirements, specifications, and interoperability requirements. These efforts require extensive development of complex capabilities to ensure robust features are delivered to the Warfighter. Funding will continue development of MMC-S version 3.2, focused on multiple platforms and programs, such as: Platform Integration (Stryker, JLTV, Abrams, Bradley, AMPV), Sensor Integration (Long-Range Acquisition System (LRAS), Improved Target Acquisition System (ITAS), Fire-Support Sensor System (FS3), Netted Lethality Upgrades, Precision Fires - Mounted Integration, finalize Over the Air Updates (Over The Network Keying (OTNK), Map Updates), Remote Display, Improved Route Planning / Navigation, Network Path Diversity (Smart Routing / APACE), additional third-party application integration, message standards migration, netted asset (Non A-PNT), and VICTORY migration.</p> <p>FY 2024 Plans: Funds continue to support MMC-T software/systems engineering and development of the BFT-3 capability under the BFT-3 transceiver and encryption device development contracts. Efforts include the integration of the BFT modular waveform, that will enable competition by allowing third-party transceiver manufacturers to access and interoperate with the existing BFT network</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>(including the BFT-2 SNCC and SGS); integration of a resilient line of sight waveform on a software defined radio; and integration of the transceiver and encryption devices to each mounted platform.</p> <p>Funds complete development of MMC-S v3.2, focused on platform sensor and interface support as well as integration with the Fires Wff. Platform development will focus on supporting interfaces to the Stryker and Bradley platforms, including Remote Display, multi-user support, and sensor integration such as Long-Range Acquisition System (LRAS), Improved Target Acquisition System (ITAS), Fire-Support Sensor System (FS3), and Netted Lethality Upgrades. Fires capability will be integrated by converging the Precision Fires - Mounted (PF-M) for trained users and adding untrained observer fires capabilities for other users. MMC-S v3.2 development funding builds on the MMC-S v3.1 smart routing features by developing support for the MMC-T prototype transceiver and encryption device to provide network path diversity and PACE planning features. These funds also initiate development of MMC-S v3.3, which includes DEVOPS, completes integration with BFT-3, and aligns with Capability Set 27 priorities.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease due to shift during FY 2024 from development to testing efforts for MMC-T and the focus on defect mitigation vice new feature development for MMC-S v.3.2.</p>				
<p>Title: Test, Evaluation and Integration</p> <p>Description: Test and evaluation (T&E) efforts consist of planning and execution of required test events for MMC-T and MMC-S to inform fielding decisions and ensure the safe delivery of capability to the Warfighter. T&E events include: Development Operations (DevOps), Developmental Tests (DT), Field Tests (FT), Software Assurance Tests, Capability Set Integration Events, Risk Reduction Tests, DT and Capability Set Operational Demonstration, Army Interoperability Certification (AIC), Security Control Assessment-Validation, and Initial Operational Test and Evaluation (IOT&E).</p> <p>FY 2023 Plans: Funds support the National Security Agency (NSA) Cybersecurity evaluation and subsequent NSA certification for the BFT-3 (MMC-T) encryption device, as well as Soldier Touch Point (STP) #1.</p> <p>Funds the required AIC and IOT&E events that support the MMC-S version 3.1 Full Deployment Decision planned for FY23. Additionally, funds DevOps activities for MMC-S version 3.2 that will commence in FY23.</p> <p>FY 2024 Plans: Funds support BFT network certification of the BFT-3 transceiver and NSA certification of the encryption device. Funds also support MMC-T T&E activities for a DT and a STP #2 (FT) in support of BFT-3 development as the program moves towards a production decision.</p>		0.529	4.695	7.833

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>Funds support MMC-S T&E activities for the required DT, AIC and OT events that support the MMC-S v3.2 Full Deployment Decision (FDD) planned for FY 2024.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to significant MMC-T requirements, including the DT and STP #2 (FT) for the BFT-3 transceiver and encryption device, and increased test efforts required for MMC-S v3.2 (DT, AIC, OT) to support the MMC-S v3.2 FDD.</p>				
<p>Title: PM Support (Matrix & Contractor)</p> <p>Description: Matrix and contractor support, including technical, logistics, and business staff oversight, for MMC-T and MMC-S.</p> <p>FY 2023 Plans: Funds continue to support matrix and contractor personnel to support BFT-3 (MMC-T) and MCE (MMC-S) development/systems engineering and provide technical and business oversight for BFT-3 transceiver and encryption device prototypes, and MMC-S software changes. Technical areas include SATCOM, Network, Intel, Cyber, RF, Waveform and Transport. Additionally, this PM support includes system analyses of Program of Record systems and future systems for integration and convergence into the MCE (MMC-S) baselines, technical readiness assessments and assistance with stakeholder technical exchange meetings and events. Business/program management includes funds execution, contract management and logistical support. Some of this work is secured via Functional Support Agreements (FSAs) between PM MC and various Government support agencies, such as the Combat Capabilities Development Command (CCDC) C5ISR (Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance) Center, and other PEOs (e.g. PEO GCS).</p> <p>FY 2024 Plans: Funds continue to finance matrix and contractor personnel to support MMC-T and MMC-S development/systems engineering and provide technical, test expertise, and business oversight for BFT-3 transceiver and encryption device prototypes, and MMC-S software changes. Technical areas include SATCOM, Network, Intel, Cyber, Radio Frequency, Waveform and Transport. Additionally, this PM support includes system analyses of external programs systems and future systems for integration and convergence into the MCE infrastructure, technical readiness assessments and assistance with stakeholder technical exchange meetings and events. Business/program management efforts include funds execution, contract management and logistical support. Some of this work is secured via FSAs between the PM and various Government support agencies, such as the DEVCOM Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, and other PEOs (e.g. PEO STRI).</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>		2.386	3.479	3.566

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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 0604805A / Command, Control, Comm unications Systems - Eng Dev	Project (Number/Name) 593 / Joint Battle Command - Platform (JBC-P)
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Increase reflects planned lifecycle efforts.			
Title: SBIR/STTR	-	1.460	-
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			
Accomplishments/Planned Programs Subtotals	19.372	44.993	34.214

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
• W61990: JOINT BATTLE COMMAND - PLATFORM (JBC-P)	253.661	186.515	215.290	-	215.290	241.819	169.334	168.780	165.067	Continuing	Continuing

Remarks
Procurement funding (Base funding) is designated for the procurement, fielding, training and program management of JBC-P (through FY 2025) and the Mounted Mission Command (MMC) Family of Systems (FoS). JBC-P will complete procurement of its Army Acquisition Objective/Basis of Issue in FY 2024, and reach Full Operational Capability in FY 2025. MMC-T development efforts are underway to ensure the next generation transceiver and encryption device (BFT-3 hardware) are compatible as the MMC FoS transitions to replace the JBC-P system. MMC-S to begin Platform Integration and Post Deployment System Support (PDSS) in FY 2025.

D. Acquisition Strategy
The JBC-P program achieved First Unit Equipped in FY 2015 in response to the JBC-P Capabilities Development Document in lieu of Capabilities Production Document (CDD ILO CPD), which was Joint Requirements Oversight Council (JROC) approved in March 2013. Using the CDD ILO CPD objective requirements, PdM JBC-P began Systems Engineering development in FY 2017 for the program's next generation Blue Force Tracking (BFT) Open Systems Architecture Developmental and systems engineering efforts, which were performed through intra-government collaboration with C5ISR's Research and Technology Integration Directorate (RTI) and the Engineering and Systems Integration Directorate (ESI).

At this same time, PdM JBC-P was overseeing development for the Mounted Computing Environment (MCE), which is one of six computing environments in the Common Operating Environment (COE). MCE is the Army's initiative to provide simple and intuitive Mission Command on-the-Move and situational awareness down to the platoon level. It is standards based, protected, and supports incremental improvements and Warfighting Function application capability enhancements.

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<p>Modernization of the JBC-P capability will be accomplished via a MMC Family of Systems (FoS) approach to maximize development flexibility and supports incremental JBC-P capability improvements over time. The MMC FoS addresses the BFT-3 effort under the MMC Transport (MMC-T) program and the next generation software development (previously conducted under the MCE funding line) under the MMC Software (MMC-S) program; planning is underway for future FoS programs to address compute and store requirements. This structure capitalizes on work completed to date to utilize and respond to technological advances to provide cutting-edge capabilities to the Warfighters and out-pace the obsolescence curve.</p> <p>MMC-T is based on the objective requirements in the JBC-P CDD ILO CPD, the MCE Requirements Definition Package (RDP), and the Mounted Mission Command-Hardware & Transport (MMC HW&T) Abbreviated CDD. This program will offer a transport agnostic Modular Open System Approach (MOSA) compliant, resilient, multi-band, multi-path capability that enables Commanders' the ability to perform Mission Command on the Move against near-peer adversaries during Multi Domain Operations in cyber- and electronic warfare-denied environments.</p> <p>The MMC-T Materiel Development Decision (MDD) Acquisition Decision Memorandum (ADM) signed in September 2021, designated MMC-T an Acquisition Category II program. The life cycle entry point will be identified based on system maturity and MMC HW&T CDD status. MMC-T utilizes an approved evolutionary acquisition approach punctuated by prototype development of the BFT-3 transceivers and encryption devices, as well as modular waveforms, which will be subjected to Developmental/Operations (DevOps) and Soldier Touch Points (STPs) to inform a MMC HW&T CDD.</p> <p>In response to the COE Information System-Initial Capability Document and the MCE RDP (both approved in October 2018), PdM JBC-P established the MMC-S program to develop the next generation JBC-P software and the MCE infrastructure to facilitate convergence of external programs and third-party applications into the MCE. 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 computing environments (CEs), including the Command Post Computing Environment and the Mobile/Handheld Computing Environment (Nett Warrior), enabling seamless Mission Command and Common Operating Picture generation across all three CEs.</p> <p>The MMC-S MDD ADM signed in June 2020 designated MMC-S an Acquisition Category II program and approved entry into the acquisition life cycle at the Full Deployment Decision (FDD) for MMC-S v3.1, which is scheduled in FY 2023. MMC-S utilizes an agile and incremental development approach, leveraging DevOps, to ensure capability is delivered quickly, satisfies requirements, and addresses Warfighter feedback. This 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 MCE.</p>		

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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 0604805A / Command, Control, Comm unications Systems - Eng Dev	Project (Number/Name) 593 / Joint Battle Command - Platform (JBC-P)
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Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SBIR/STTR	TBD	Various : Various	-	-		1.460		-		-		-	0.000	1.460	-
Subtotal			-	-		1.460		-		-		-	0.000	1.460	N/A

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BFT-3 (MMC-T) Software/ Systems Engineering	C/FFP	GDMS/L3Harris : Multiple	78.801	16.457	Nov 2021	19.798	Nov 2022	11.343	Nov 2023	-		11.343	Continuing	Continuing	-
MCE (MMC-S) Software/ Systems Engineering	SS/ Various	Multiple (Government and industry) : Multiple	-	-		15.561	Nov 2022	11.472	Nov 2023	-		11.472	Continuing	Continuing	-
Subtotal			78.801	16.457		35.359		22.815		-		22.815	Continuing	Continuing	N/A

Remarks
Decrease due to shift during FY 2024 from development to testing efforts for MMC-T and the focus on defect mitigation vice new feature development for MMC-S v.3.2.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PM Support (Matrix / SETA Contractor)	Various	PM JBC-P : Aberdeen Proving Ground (APG), MD	11.474	2.386	Nov 2021	3.479	Nov 2022	3.566	Nov 2023	-		3.566	Continuing	Continuing	-
Subtotal			11.474	2.386		3.479		3.566		-		3.566	Continuing	Continuing	N/A

Remarks
Funding remains relatively consistent.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army **Date:** March 2023

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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BFT-3 (MMC-T) Develop and Conduct Tests and Assessments	MIPR	Multiple : Multiple	30.394	0.529	Oct 2021	1.030	Oct 2022	2.844	Nov 2023	-		2.844	Continuing	Continuing	-
MCE (MMC-S) Develop and Conduct Tests and Assessments	MIPR	Multiple : Multiple	-	-		3.665	Nov 2022	4.989	Nov 2023	-		4.989	Continuing	Continuing	-
Subtotal			30.394	0.529		4.695		7.833		-		7.833	Continuing	Continuing	N/A

Remarks
Increase due to significant MMC-T requirements, including the DT and STP #2 (FT) for the BFT-3 transceiver and encryption device, and increased test efforts required for MMC-S v3.2 (DT, AIC, OT) to support the MMC-S v3.2 FDD.

	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	120.669	19.372	44.993	34.214	-	34.214	Continuing	Continuing	N/A

Remarks

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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 0604805A / Command, Control, Comm unications Systems - Eng Dev	Project (Number/Name) 593 / Joint Battle Command - Platform (JBC-P)

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
BFT-3 (MMC-T) Resilient Line of Sight (LOS) Contract Award	▲1																											
<i>Resilient Line of Sight Contract Award (Prototype Development)</i>																												
BFT-3 (MMC-T) Resilient LOS Development		■	■	■																								
<i>BFT-3 LOS Development</i>																												
BFT-3 (MMC-T) Transceiver Request for Prototype Proposal...		▲2																										
<i>Standard Transceiver RFP</i>																												
BFT-3 (MMC-T) Encryption Device RFP		▲3																										
<i>Encryption Device RFP</i>																												
BFT-3 (MMC-T) Transceiver & Encryption Device Contract A...			■																									
<i>Standard Transceiver & Encryption Device Contract Awards (Prototype Development)</i>																												
BFT-3 (MMC-T) Transceiver and Encryption Development		■	■	■																								
<i>BFT-3 Transceiver & Encryption Dev</i>																												
BFT-3 (MMC-T) Transceiver & Encryption Developmental Tes...		■	■	■																								
<i>CSISR Lab Based Testing To Further Inform Prototype Development</i>																												
BFT-3 (MMC-T) Transceiver Design Review 1				▲4																								
<i>PDR for Standard Transceiver</i>																												
BFT-3 (MMC-T) Line of Sight Waveform Delivery				▲5																								
<i>Initial Delivery of Line of Sight Waveform</i>																												
BFT-3 (MMC-T) Soldier Touch Point (STP) 1						■																						
<i>Planned DevOps Test Event (11th ACR)</i>																												
BFT-3 (MMC-T) Encryption Device Design Review 1							▲6																					
<i>Preliminary Design Review (PDR) for Standard Transceiver Encryption Device</i>																												
BFT-3 (MMC-T) Transceiver Design Review 2							▲7																					
<i>Critical Design Review (CDR) Standard Transceiver</i>																												
BFT-3 (MMC-T) Encryption Device Design Review 2								▲8																				
<i>CDR Standard Encryption Device</i>																												

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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 0604805A / <i>Command, Control, Comm unications Systems - Eng Dev</i>	Project (Number/Name) 593 / <i>Joint Battle Command - Platform (JBC-P)</i>

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
BFT-3 (MMC-T) Encryption Device Initial Prototype Deliveries								9																				
BFT-3 (MMC-T) Transceiver Initial Prototype Deliveries								12																				
BFT-3 (MMC-T) Transceiver & Encryption Device Developmen...																												
BFT-3 (MMC-T) Soldier Touch Point (STP) 2 (Field Test)																												
BFT-3 (MMC-T) Encryption Device Certification																												
BFT-3 (MMC-T) Transceiver & Encryption Device Final Prot...																												
BFT-3 (MMC-T) Operational Test (OT) / Limited User Test ...																												
BFT-3 (MMC-T) Low Rate Initial Production (LRIP) Award																												
BFT-3 (MMC-T) Deliveries (Limited Rate Initial Productio...																												
BFT-3 (MMC-T) Transceiver & Encryption Device Initial Op...																												
BFT-3 (MMC-T) Aviation Development																												
BFT-3 (MMC-T) Transceiver & Encryption Device Army Inter...																												
BFT-3 (MMC-T) Transceiver & Encryption Device Full Rate ...																												

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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 0604805A / Command, Control, Comm unications Systems - Eng Dev	Project (Number/Name) 593 / Joint Battle Command - Platform (JBC-P)	

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
BFT-3 (MMC-T) Transceiver & Encryption Device First Unit...																												
MCE (MMC-S) v3.1 Planned Army Interoperability Certifica...																												
MCE (MMC-S) v3.1 Planned Initial Operational Test & Eval...																												
MCE (MMC-S) v3.1 Full Deployment Decision (FDD)																												
MCE (MMC-S) v3.1 First Unit Equipped (FUE)																												
MCE (MMC-S) v3.2 Arch, System Engr & Development																												
MCE (MMC-S) v3.2 Planned Developmental Test (DT)																												
MCE (MMC-S) v3.2 Planned Operational Test (OT)																												
MCE (MMC-S) v3.2 Planned Army Interoperability Certifica...																												
MCE (MMC-S) v3.2 Full Deployment Decision (FDD)																												
MCE (MMC-S) v3.2 First Unit Equipped (FUE)																												
MCE (MMC-S) v3.3 Arch, System Engr & Development																												
MCE (MMC-S) v3.3 Planned Operational Test (OT)																												

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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 0604805A / <i>Command, Control, Comm unications Systems - Eng Dev</i>	Project (Number/Name) 593 / <i>Joint Battle Command - Platform (JBC-P)</i>

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
MCE (MMC-S) v3.3 Planned Army Interoperability Certifica...																	<p>MMC-S v3.3 AIC to inform FDD</p> <p>MMC v3.3 FDD</p> <p>MMC-S v3.4 SE & Development/DevOps</p>											
MCE (MMC-S) v3.3 Full Deployment Decision (FDD)																												
MCE (MMC-S) v3.4 Arch, System Engr & Development																												
MCE (MMC-S) v3.4 Planned Operational Test (OT)																												
MCE (MMC-S) v3.4 Planned Army Interoperability Certifica...																	<p>MMC-S v3.4</p>											
MCE (MMC-S) v3.4 Full Deployment Decision (FDD)																	<p>MMC-S v3.4</p> <p>MMC</p>											

Note
 In FY 2023, the Army combined the RDT&E funding from the Mounted Computing Environment (MCE) (PE 0604818/Proj EJ5) and Joint Battle Command - Platform (JBC-P) (PE 0604805A/Proj 593) lines. The RDT&E funding covers modernizing the JBC-P capability, which will be provided through the Mounted Mission Command

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
2040 / 5	PE 0604805A / <i>Command, Control, Communications Systems - Eng Dev</i>	593 / <i>Joint Battle Command - Platform (JBC-P)</i>

(MMC) Family of Systems (FoS). MMC FoS includes Blue Force Tracking 3 (BFT-3) work under MMC-Transport (MMC-T) and MMC-Software (MMC-S), which was previously funded under Project EJ5.

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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 0604805A / <i>Command, Control, Comm unications Systems - Eng Dev</i>	Project (Number/Name) 593 / <i>Joint Battle Command - Platform (JBC-P)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BFT-3 (MMC-T) Systems Engineering Development and Consortium	2	2017	4	2021
BFT-3 (MMC-T) Developmental Testing (C5ISR Lab based)	1	2021	4	2021
BFT-3 (MMC-T) Resilient Line of Sight (LOS) Contract Award	1	2022	1	2022
BFT-3 (MMC-T) Resilient LOS Development	1	2022	2	2023
BFT-3 (MMC-T) Transceiver Request for Prototype Proposal (RPP)	2	2022	2	2022
BFT-3 (MMC-T) Encryption Device RPP	2	2022	2	2022
BFT-3 (MMC-T) Transceiver & Encryption Device Contract Awards	3	2022	4	2022
BFT-3 (MMC-T) Transceiver and Encryption Development	3	2022	2	2025
BFT-3 (MMC-T) Transceiver & Encryption Developmental Testing (C5ISR Lab based) 2	3	2022	4	2022
BFT-3 (MMC-T) Transceiver Design Review 1	4	2022	4	2022
BFT-3 (MMC-T) Line of Sight Waveform Delivery	1	2023	1	2023
BFT-3 (MMC-T) Soldier Touch Point (STP) 1	2	2023	2	2023
BFT-3 (MMC-T) Encryption Device Design Review 1	3	2023	3	2023
BFT-3 (MMC-T) Transceiver Design Review 2	3	2023	3	2023
BFT-3 (MMC-T) Encryption Device Design Review 2	4	2023	4	2023
BFT-3 (MMC-T) Encryption Device Initial Prototype Deliveries	4	2023	4	2023
BFT-3 (MMC-T) Transceiver Initial Prototype Deliveries	1	2024	1	2024
BFT-3 (MMC-T) Transceiver & Encryption Device Developmental Test (DT)	2	2024	3	2024
BFT-3 (MMC-T) Soldier Touch Point (STP) 2 (Field Test)	3	2024	3	2024
BFT-3 (MMC-T) Encryption Device Certification	3	2024	3	2024
BFT-3 (MMC-T) Transceiver & Encryption Device Final Prototype Deliveries	4	2024	4	2024
BFT-3 (MMC-T) Operational Test (OT) / Limited User Test (LUT)	1	2025	1	2025

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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 0604805A / <i>Command, Control, Comm unications Systems - Eng Dev</i>	Project (Number/Name) 593 / <i>Joint Battle Command - Platform (JBC-P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
BFT-3 (MMC-T) Low Rate Initial Production (LRIP) Award	3	2025	3	2025
BFT-3 (MMC-T) Deliveries (Limited Rate Initial Production (LRIP))	1	2026	4	2026
BFT-3 (MMC-T) Transceiver & Encryption Device Initial Operational Test & Eval	2	2026	2	2026
BFT-3 (MMC-T) Aviation Development	3	2026	1	2028
BFT-3 (MMC-T) Transceiver & Encryption Device Army Interoperability Cert (AIC)	3	2026	4	2026
BFT-3 (MMC-T) Transceiver & Encryption Device Full Rate Production (FRP) Award	3	2026	3	2026
BFT-3 (MMC-T) Transceiver & Encryption Device First Unit Equipped (FUE)	4	2026	4	2026
MCE (MMC-S) v3.1 Planned Army Interoperability Certification (AIC)	1	2023	2	2023
MCE (MMC-S) v3.1 Planned Initial Operational Test & Evaluation (IOT&E)	3	2023	3	2023
MCE (MMC-S) v3.1 Full Deployment Decision (FDD)	4	2023	4	2023
MCE (MMC-S) v3.1 First Unit Equipped (FUE)	1	2024	1	2024
MCE (MMC-S) v3.2 Arch, System Engr & Development	1	2023	3	2024
MCE (MMC-S) v3.2 Planned Developmental Test (DT)	1	2024	1	2024
MCE (MMC-S) v3.2 Planned Operational Test (OT)	3	2024	3	2024
MCE (MMC-S) v3.2 Planned Army Interoperability Certification (AIC)	3	2024	3	2024
MCE (MMC-S) v3.2 Full Deployment Decision (FDD)	4	2024	4	2024
MCE (MMC-S) v3.2 First Unit Equipped (FUE)	1	2025	1	2025
MCE (MMC-S) v3.3 Arch, System Engr & Development	2	2024	2	2026
MCE (MMC-S) v3.3 Planned Operational Test (OT)	3	2026	3	2026
MCE (MMC-S) v3.3 Planned Army Interoperability Certification (AIC)	3	2026	3	2026
MCE (MMC-S) v3.3 Full Deployment Decision (FDD)	4	2026	4	2026
MCE (MMC-S) v3.4 Arch, System Engr & Development	2	2026	2	2028
MCE (MMC-S) v3.4 Planned Operational Test (OT)	3	2028	3	2028
MCE (MMC-S) v3.4 Planned Army Interoperability Certification (AIC)	3	2028	3	2028
MCE (MMC-S) v3.4 Full Deployment Decision (FDD)	4	2028	4	2028

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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 0604805A / <i>Command, Control, Comm unications Systems - Eng Dev</i>	Project (Number/Name) 593 / <i>Joint Battle Command - Platform (JBC-P)</i>

Note
In FY 2023, the Army combined the RDT&E funding from the Mounted Computing Environment (MCE) (PE 0604818/Proj EJ5) and Joint Battle Command - Platform (JBC-P) (PE 0604805A/Proj 593) lines. The RDT&E funding covers modernizing the JBC-P capability, which will be provided through the Mounted Mission Command (MMC) Family of Systems (FoS). MMC FoS includes Blue Force Tracking 3 (BFT-3) work under MMC-Transport (MMC-T) and MMC-Software (MMC-S), which was previously funded under Project EJ5.