Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	25.131	35.319	28.378	-	28.378	28.104	29.349	24.927	23.232	0.000	194.440
BS9: *Robotic Payloads*	-	7.364	5.071	-	-	-	-	-	-	-	0.000	12.435
FB3: *Robotics Architecture*	-	2.668	2.731	2.735	-	2.735	2.739	2.769	2.800	2.828	0.000	19.270
FB6: *Squad Multipurpose Equipment Transport (SMET)*	-	10.159	19.839	17.253	-	17.253	15.967	16.137	10.306	8.465	0.000	98.126
FG8: *Common Robotic Controller*	-	4.940	7.678	8.390	-	8.390	9.398	10.443	11.821	11.939	0.000	64.609

A. Mission Description and Budget Item Justification

This Program Element supports modernization of the current Ground Robotic fleets by investigating technology insertions including, but not limited to: condition-based maintenance, vetronics, Robotic Architecture, autonomous operations and other emerging technologies. Funding also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

A portion of this funding line is a key enabler of the Army Modernization Priorities in support of the Universal Robotic Controller program.

BS9: The Ground Robotics - Robotic Payloads project is a suite of modular capabilities designed with open architecture to provide an increased level of standoff, situational awareness, disruption capability and dexterity to respond to current and emergent Engineer, CBRN and EOD requirements. Current Man Transportable Robotic Systems Increment II (MTRS Inc II) and Common Robotic System - Heavy (CRS-H) system characteristics include the following: a remote controlled articulated arm with a gripper, operating range up to 800 meters, multiple illuminated cameras, a pan/tilt surveillance camera, two-way radio, and a ruggedized operator control unit. This project will support development and testing of the following capabilities: Extended Range Mesh Network (ERMN) and Pan/Tilt Imager (PTI). The use of robotic payloads allows the first approach, to potentially explosive hazards, to be made by a robot rather than a Soldier. These multiple, modular robotic mission payloads will use open architecture to integrate with the MTRS Inc II and CRS-H platforms to form the Army's next generation platform adaptable robotics systems.

There is no FY 2025 request for BS9 / Robotic Payloads.

FB3: Robotic Architecture (RA) provides the engineering and development resources to manage the overarching architecture for robotic systems for both modular and interoperable systems across the Joint Force to facilitate future modernization efforts. It will manage the interoperability standards, modular payload interfaces, common software and common architecture for robotics and autonomous platforms, payloads and universal controllers in support of Human-Machine Integrated Formations (H-MIF). It will also enhance the Common Specifications Reference (CSR) to provide a repository codifying the Army Robotic Autonomous Systems (RAS) standards for open architecture, interoperability interfaces, common control, performance specifications and test results. RA includes the construction of program specific Interoperability Profiles (IOP) (e.g. Small Multipurpose Equipment Transport (S-MET) Inc II, Autonomous Transport Vehicle - System (ATV-S), Assault Breach Vehicle Remote Control System (ABV RCS), Robotics and Autonomy Command and Control (RAC2), Common Robotics System (Individual) (CRS(I)), Enhanced Robotic

Payloads (ERP), Optionally Manned Fighting Vehicle (OMFV), Robotic Combat Vehicle (RCV) variants, Common Tactical Truck (CTT), robotic bridging and construction vehicles, robotic applique kits for manned ground systems) and new standards addressing emerging requirements and Modular Mission Payloads (MMP) including Cyber Security, software safety requirements from MIL-STD-882E, new autonomous behaviors and artificial intelligence, new payloads, lethality, etc. RA underpins the RAS software autonomy architecture strategy by providing the interface standards to allow the compatibility between next generation autonomous ground system software products (i.e., Robotic Technology Kernel, Warfighter Machine Interface, and alternative competing or complimentary innovative industry software products). A key focus of RA will be integrating the RA interfaces with the larger enterprise confluence of Software Foundry, Agile/DevSecOps and software development environments as they are applied to matured product lines such as Robotic Technology Kernel (RTK), Warfighter Machine Interface (WMI) and/or integrated with commercially-developed software.

FY 2025 RDTE Base dollars in the amount of $2.735 million supports the finalization of the Robotics and Autonomous Systems, Ground (RAS-G) Interoperability Profile (IOP) Version 7.0, the initiation of IOP Version 8.0, and the continued maturation of IOP to a single-source model to enable digital engineering. IOP 7.0 will provide the required modular open interfaces and compliance test tools for a multitude of existing and emerging programs. IOP V7 will provide interfaces to support the ground robotic control of advanced H-MIF payloads such as Javelin, tethered unmanned aerial systems, Switch Blade, and counter unmanned aerial systems. The IOP provides the interfaces between autonomy kits and vehicle by-wire kits, as well as the interfaces to Robotic Technology Kernel (RTK) and Warfighter Machine Interface (WMI) and alternative competing or complimentary autonomy packages. Additionally, FY 2025 RDTE funds will iterate, mature and harden Robotic Operating System, Military (ROS-M) software infrastructure, ROS-M instantiation documents and manage the ROS-M registry and repository. FY 2025 RDTE funds will also iteratively mature the Common Specification Reference (CSR) from its minimum viable capability release.

FB6: The Small Multipurpose Equipment Transport (S-MET) system provides small units with a remote-controlled cargo/equipment transport and limited tactical resupply capability, increasing mission capabilities while reducing the individual Soldier load. The S-MET will be capable of carrying 2,500 pounds of equipment currently required to support Infantry and Engineer Platoons in the Infantry Brigade Combat Team (IBCT) for a 72-hour mission without resupply. It is also capable of generating 1-3KW of offload power, with an operational range of 20 miles in silent mode. S-MET will have open architectures, a remote control, support casualty evacuation, and integrate Modular Mission Payloads (MMP) and Technical Insertions. The Army Acquisition Objective (AAO) is 2,819 across S-MET Increment I (Inc I) and S-MET Increment II (Inc II). The Army Procurement Objective (APO) S-MET Inc I quantity is 624 under a Middle Tier of Acquisition Rapid Fielding (MTA-RF). The remaining AAO will be fulfilled through S-MET Inc I/II quantities.

FY 2025 RDTE Base dollars in the amount of $15.918 million funds the continuation of S-MET Inc II development, prototyping, and testing. S-MET Inc II is a follow-on program that will add capability and system maturity in the areas of platform autonomy, increased cyber and electromagnetic interference hardening, ballistic protections against kinetic threats, and improved battery safety for additional transportability modes. Program support to include labor, travel and miscellaneous expenses in support of these RDTE efforts will also be funded.

FY 2025 RDTE Base dollars in the amount of $1.335 million continues to support development, integration and testing of S-MET Modular Mission Payloads (MMP) and Technical Insertions for application onto S-MET platforms.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605053A *I Ground Robotics*

The total cost of the S-MET Inc I Middle Tier of Acquisition Rapid Fielding effort is $160.659 million from FY19 to FY24, including RDT&E ($26.355M) and Procurement ($134.304M). The S-MET Inc I MTA-RF program is fully funded across the Future Years Defense Program.

FG8: Universal Robotics Control (URC) will provide the common information system for all squad and above Robotic and Autonomous Systems (RAS) command and control (C2). The U.S. Army is challenged to transform the Command and Control (C2) warfighting function to execute the RAS strategy in support of Multi-Domain Operations (MDO). The Universal Robotics Control (URC) program responds to this challenge by developing and fielding a system that rapidly synchronizes effects in all domains to defeat the enemy regardless of the mission command network. The URC operates as a distributed information system designed for resilience in a high threat environment utilizing existing and planned RAS elements. URC provides soldier and machine interfaces to establish and maintain positive C2 in all phases of combat and support operations, supported by a continuously developed software ecosystem. The capabilities of a unified information system for RAS C2 at the tactical edge enables improved situational awareness, multi-domain maneuvers, and deployment of lethal and nonlethal effects. URC is a critical enabling capability for NGCV OMFV and RCV programs.

FY 2025 RDTE Base dollars in the amount of $8.390 million will be utilized in the Execution Phase of the Software Acquisition Pathway. This effort will execute the development of the Minimum Viable Product (MVP) and the Minimum Viable Capability Release (MVCR) and Software Acquisition Pathway associated tasks. This phase will include deployment of iterative developed software to the operational environment, conducting value assessments with the user community to mature capability requirements, and provide technical training.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	26.809	35.319	42.549	-	42.549
Current President's Budget	25.131	35.319	28.378	-	28.378
Total Adjustments	-1.678	0.000	-14.171	-	-14.171
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.699	-			
• SBIR/STTR Transfer	-0.979	-			
• Adjustments to Budget Years	-	-	-14.171	-	-14.171

Change Summary Explanation

Funding reduction due to 0605053A - Ground Robotics, Robotic Payloads transitioning to Procurement in FY 2025.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) BS9 / *Robotic Payloads*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
BS9: *Robotic Payloads*	-	7.364	5.071	-	-	-	-	-	-	-	0.000	12.435
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Ground Robotics - Robotic Payloads project is a suite of modular capabilities designed with open architecture to provide an increased level of standoff, situational awareness, disruption capability and dexterity to respond to current and emergent Engineer, CBRN and EOD requirements. Current Man Transportable Robotic Systems Increment II (MTRS Inc II) and Common Robotic System - Heavy (CRS-H) system characteristics include the following: a remote controlled articulated arm with a gripper, operating range up to 800 meters, multiple illuminated cameras, a pan/tilt surveillance camera, two-way radio, and a ruggedized operator control unit. This project will support development and testing of the following capabilities: Extended Range Mesh Network (ERMN) and Pan/Tilt Imager (PTI). The use of robotic payloads allows the first approach, to potentially explosive hazards, to be made by a robot rather than a Soldier. These multiple, modular robotic mission payloads will use open architecture to integrate with the MTRS Inc II and CRS-H platforms to form the Army's next generation platform adaptable robotics systems.

There is no FY 2025 request for BS9 / Robotic Payloads.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Prototype and Payload Development ***Description:*** Development of Extended Range Mesh Network (ERMN), Pan/Tilt Imager (PTI) and payload prototypes and payload to platform integration requirements.	2.530	-	-
Title: Integration & Software Development (Platform) ***Description:*** Development of integration provisions for mounting the ERMN, PTI to both the MTRS Inc II and CRS-H platforms. Development of the necessary software updates to allow for payload to platform communications.	3.061	-	-
Title: ERMN and PTI Prototypes ***Description:*** Purchase of the ERMN & PTI payloads ***FY 2024 Plans:*** FY 2024 funds to be used to update and retrofit payloads from test. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease to $0 in FY 2025 attributed to the developmental efforts completing and production start in FY 2025.	-	0.350	-
Title: Testing and Evaluation ***Description:*** Testing, evaluation and log analysis of the ERMN, PTI payloads on to the host platforms CRS-H and MTRS Inc II	0.174	3.796	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** BS9 / *Robotic Payloads*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: FY 2024 funding supports testing and training of the vendor prototypes to the performance specifications requirements and safety requirements. FY 2024 funding will also fund soldier test point, and product qualification testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease to $0 in FY 2025 attributed to the developmental efforts completing and production start in FY 2025.			
Title: Program Support ***Description:*** Program support for Enhanced Robotic Payload program ***FY 2024 Plans:*** FY 2024 funds to support ERP program during integration, development and test of payloads on to host platforms, and achieve Milestone C. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease to $0 in FY 2025 attributed to the developmental efforts completing and production start in FY 2025.	1.336	0.925	-
Title: Test Assets	0.263	-	-
Accomplishments/Planned Programs Subtotals	7.364	5.071	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• R06305: *Enhanced Robotics Payloads SKO*	-	-	15.557	-	15.557	15.884	11.900	-	-	0.000	43.341

Remarks

D. Acquisition Strategy

PdM Robotic and Autonomous Systems (RAS) developed a Performance Specification (PSPEC) from the Enhanced Robotic Payloads-Unmanned Ground Systems (ERP-UGS) Capability Development Document (CDD). PdM RAS released a request for proposal from industry on capabilities to meet the PSPEC which resulted in the selection of the best capability to be further developed, integrated into the host platforms, and tested as a system in an Abbreviated Engineering Manufacturing Development (EMD) phase. After a successful EMD, a production decision will be made to enter Production and Deployment (PD) phase.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) BS9 / *Robotic Payloads*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	MIPR	DETROIT ACC and TACOM ILSC : Warren, MI	0.912	1.336	Oct 2022	0.925	Oct 2023	-		-		-	0.000	3.173	-
		Subtotal	0.912	1.336		0.925		-		-		-	0.000	3.173	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype and Payload Development ERMN & PTI	SS/CPFF	FLIR : Boston, MA	4.367	2.530	Feb 2023	-		-		-		-	0.000	6.897	-
Integration & Software Development ERMN & PTI	SS/CPFF	FLIR : Boston, Ma	2.941	3.061	Feb 2023	-		-		-		-	0.000	6.002	-
ERMN & PTI Prototypes	SS/CPFF	FLIR : Boston, Ma	-	-		0.350	Jul 2024	-		-		-	0.000	0.350	-
Test Assets (CRS-H and MTRS)	SS/TBD	FLIR : Boston, MA	-	0.263	Aug 2023	-		-		-		-	0.000	0.263	-
		Subtotal	7.308	5.854		0.350		-		-		-	0.000	13.512	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test ERMN & PTI	MIPR	ATEC : ABERDEEN, MD	-	0.174		1.000	May 2024	-		-		-	0.000	1.174	-
Logistics Product Development	MIPR	TACOM- ILSC : WARREN, MI	-	-		1.596	Mar 2024	-		-		-	0.000	1.596	-
Soldier Touch Point	TBD	TBD : TBD	-	-		0.200	May 2024	-		-		-	0.000	0.200	-
Production Qualification Test (ERMN & PTI) Plan and Conduct	MIPR	ATEC : ABERDEEN, MD	-	-		1.000	Sep 2024	-		-		-	0.000	1.000	-
		Subtotal	-	0.174		3.796		-		-		-	0.000	3.970	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) BS9 / *Robotic Payloads*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.220	7.364		5.071		-		-		-	0.000	20.655	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** BS9 / *Robotic Payloads*

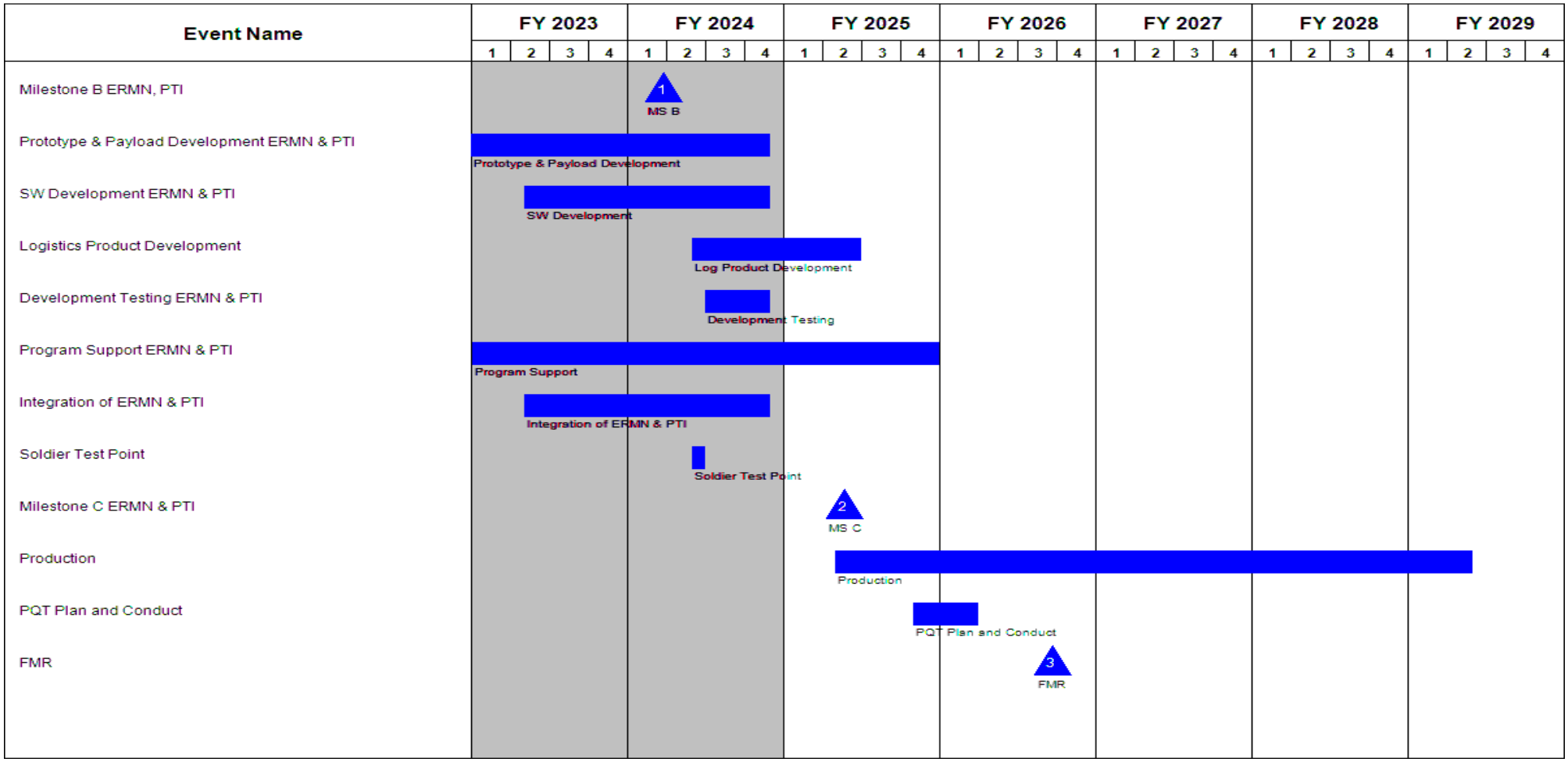

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** BS9 / *Robotic Payloads*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Milestone B ERMN, PTI	1	2024	1	2024
Prototype & Payload Development ERMN & PTI	4	2022	4	2024
SW Development ERMN & PTI	2	2023	4	2024
Logistics Product Development	2	2024	2	2025
Development Testing ERMN & PTI	3	2024	4	2024
Program Support ERMN & PTI	1	2022	4	2025
Integration of ERMN & PTI	2	2023	4	2024
Soldier Test Point	2	2024	2	2024
Milestone C ERMN & PTI	2	2025	2	2025
Production	2	2025	2	2029
PQT Plan and Conduct	4	2025	1	2026
FMR	3	2026	3	2026

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army										Date: March 2024		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*				Project (Number/Name) FB3 / *Robotics Architecture*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
FB3: *Robotics Architecture*	-	2.668	2.731	2.735	-	2.735	2.739	2.769	2.800	2.828	0.000	19.270
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Robotic Architecture (RA) provides the engineering and development resources to manage the overarching architecture for robotic systems for both modular and interoperable systems across the Joint Force to facilitate future modernization efforts. It will manage the interoperability standards, modular payload interfaces, common software and common architecture for robotics and autonomous platforms, payloads and universal controllers in support of Human-Machine Integrated Formations (H-MIF). It will also enhance the Common Specifications Reference (CSR) to provide a repository codifying the Army Robotic Autonomous Systems (RAS) standards for open architecture, interoperability interfaces, common control, performance specifications and test results. RA includes the construction of program specific Interoperability Profiles (IOP) (e.g. Small Multipurpose Equipment Transport (S-MET) Inc II, Autonomous Transport Vehicle - System (ATV-S), Assault Breach Vehicle Remote Control System (ABV RCS), Robotics and Autonomy Command and Control (RAC2), Common Robotics System (Individual) (CRS(I)), Enhanced Robotic Payloads (ERP), Optionally Manned Fighting Vehicle (OMFV), Robotic Combat Vehicle (RCV) variants, Common Tactical Truck (CTT), robotic bridging and construction vehicles, robotic applique kits for manned ground systems) and new standards addressing emerging requirements and Modular Mission Payloads (MMP) including Cyber Security, software safety requirements from MIL-STD-882E, new autonomous behaviors and artificial intelligence, new payloads, lethality, etc. RA underpins the RAS software autonomy architecture strategy by providing the interface standards to allow the compatibility between next generation autonomous ground system software products (i.e., Robotic Technology Kernel, Warfighter Machine Interface, and alternative competing or complimentary innovative industry software products). A key focus of RA will be integrating the RA interfaces with the larger enterprise confluence of Software Foundry, Agile/DevSecOps and software development environments as they are applied to matured product lines such as Robotic Technology Kernel (RTK), Warfighter Machine Interface (WMI) and/or integrated with commercially-developed software.

FY 2025 Base dollars in the amount of $2.735 million supports the finalization of the Robotics and Autonomous Systems, Ground (RAS-G) Interoperability Profile (IOP) Version 7.0, the initiation of IOP Version 8.0, and the continued maturation of IOP to a single-source model to enable digital engineering. IOP 7.0 will provide the required modular open interfaces and compliance test tools for a multitude of existing and emerging programs. IOP V7 will provide interfaces to support the ground robotic control of advanced H-MIF payloads such as Javelin, tethered unmanned aerial systems, Switch Blade, and counter unmanned aerial systems. The IOP provides the interfaces between autonomy kits and vehicle by-wire kits, as well as the interfaces to Robotic Technology Kernel (RTK) and Warfighter Machine Interface (WMI) and alternative competing or complimentary autonomy packages. Additionally, FY 2025 RDTE funds will iterate, mature and harden Robotic Operating System, Military (ROS-M) software infrastructure, ROS-M instantiation documents and manage the ROS-M registry and repository. FY 2025 RDTE funds will also iteratively mature the Common Specification Reference (CSR) from its minimum viable capability release.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Robotics Architecture	2.668	2.731	2.735
Description: Provide architecture tools and support for current Programs of Record (PoR) & new requirements to allow for interoperability within the Joint community for Robotics & Autonomous Systems.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB3 / *Robotics Architecture*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: FY 2024 RDTE funds in the amount of $2.731 million supports the post-finalization of the Robotics and Autonomous Systems, Ground (RAS-G) Interoperability Profile (IOP) Version 6. IOP V6.0 and initiation of IOP V7.0 and will provide the required modular open interfaces and compliance test tools for new programs including Small Mobile Equipment Transport (S-MET) Increment II & Modular Mission Payloads (MMPs), Autonomous Tactical Vehicle-System (ATV-S), Optionally Manned Fighting Vehicle (OMFV), Robotic Combat Vehicle (RCV), Enhanced Robotics Payloads (ERP), Assault Breacher Vehicle Remote Control System (ABV RCS), Robotics Architecture Command & Control (RAC2), Common Tactical Truck (CTT) and robotic applique kits for manned ground systems. Additionally, FY 2024 RDTE funds will continue the development, iteration & hardening of Robotic Operating System, Military (ROS-M) software modules and ROS-M instantiation documents, and management of ROS-M registry & repository infrastructure. FY 2024 RDTE funds will also move the Common Specification Reference (CSR) from minimum viable product to minimum viable capability release. ***FY 2025 Plans:*** FY 2025 RDTE supports the finalization of the Robotics and Autonomous Systems, Ground (RAS-G) Interoperability Profile (IOP) Version 7.0, the initiation of IOP Version 8.0, and the continued maturation of IOP to a single-source model to enable digital engineering. FY 2025 RDTE funds will continue the development, iteration & hardening of Robotic Operating System, Military (ROS-M) software modules and ROS-M instantiation documents, and management of ROS-M registry & repository infrastructure. FY 2025 RDTE funds will also iteratively mature the Common Specification Reference (CSR) from its minimum viable capability release. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 is slightly higher than FY2024 due to a increased requirement to support Architecture Products for Autonomous Systems efforts.			
Accomplishments/Planned Programs Subtotals	2.668	2.731	2.735

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Robotics Architecture line develops IOP, ROS-M, and CSR tools and supporting infrastructure. It leverages intellectual capital and products which allow for Joint interoperability and helps meet Army Program of Record cost and schedule while delivering high quality products for fielding. The architecture and tools developed under this line provide enterprise-wide efficiencies and are central to the Army's acquisition philosophy of a modular open system approach between the major subsystems of robotics and autonomous systems, as described throughout the Army approved Robotics & Autonomous Systems (RAS) Initial Capabilities Document (ICD), as well as its update to support artificial intelligence.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FB3 / *Robotics Architecture*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	Various : Multiple	2.051	0.952	Dec 2022	0.161	Jan 2024	0.165	Jan 2025	-		0.165	0.000	3.329	-
		Subtotal	2.051	0.952		0.161		0.165		-		0.165	0.000	3.329	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IOP Version Development	SS/CPFF	Various / DCS Corp : Warren, MI	2.713	1.000	Mar 2023	0.370	Nov 2023	0.370	Nov 2024	-		0.370	0.000	4.453	-
IOP Version Completion & Release	MIPR	GVSC : Warren, MI	-	-		0.500	Nov 2023	0.500	Nov 2024	-		0.500	0.000	1.000	-
Conformance Verification Testing (CVT) Updates	MIPR	GVSC : Warren, MI	0.516	-		0.600	Nov 2023	0.500	Nov 2024	-		0.500	0.000	1.616	-
DCS / Neya Systems for Common Specification Reference (CSR) development	C/CPFF	DCS / Neya Systems : Various	1.002	0.300	Mar 2023	0.300	Mar 2024	0.300	Mar 2025	-		0.300	0.000	1.902	-
Model based Systems Engineering IOP	MIPR	GVSC : Warren, MI	-	-		0.200	Nov 2023	0.100	Nov 2024	-		0.100	0.000	0.300	-
Architecture Products for Autonomous Systems	SS/CPFF	DCS Corp : Alexandria, VA	-	0.275	Apr 2023	-		0.200	Mar 2025	-		0.200	0.000	0.475	-
Robotic Operating System - Military (ROS-M)	Various	Various : Multiple	2.270	0.141	May 2023	0.600	Mar 2024	0.600	Mar 2025	-		0.600	0.000	3.611	-
		Subtotal	6.501	1.716		2.570		2.570		-		2.570	0.000	13.357	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.552	2.668		2.731		2.735		-		2.735	0.000	16.686	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB3 / *Robotics Architecture*

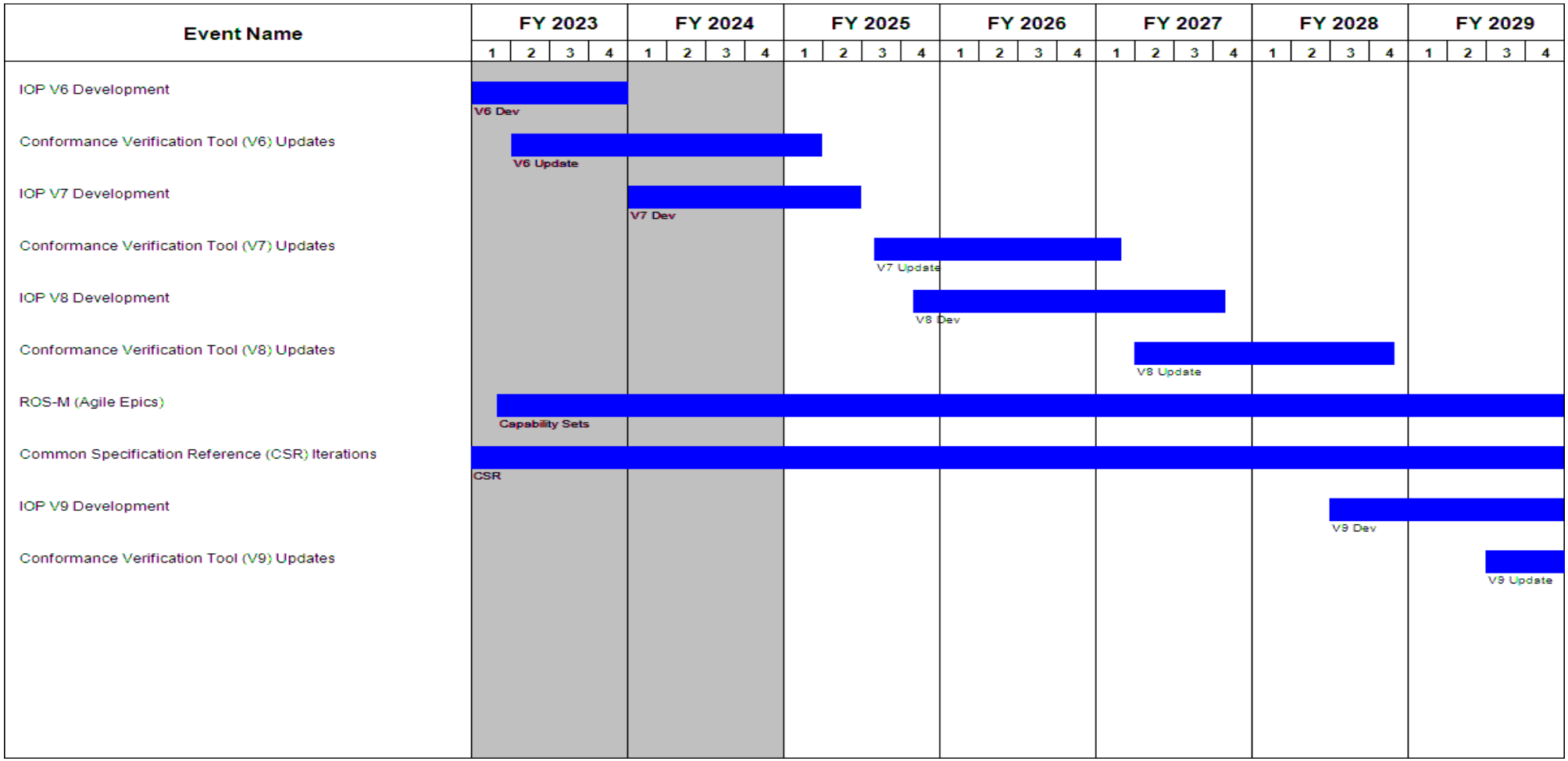

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB3 / *Robotics Architecture*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
IOP V4 Capability Plan (CP) Development	1	2018	2	2018
IOP V4 WIPT Kickoff	3	2018	3	2018
IOP V4 WG Development	3	2018	3	2019
Conformance Verification Testing (CVT) V3 Update release to industry	1	2018	4	2018
Instantiation tool development	2	2018	4	2018
Conformance Verification Testing (CVT) V4 Development	1	2019	4	2019
Conformance Verification Tool (CVT) V4 Update release to industry	1	2020	1	2021
IOP V5 Capability Plan (CP) Development	1	2020	2	2020
IOP V5 WIPT Kickoff	3	2020	3	2020
IOP V5 WG Development	3	2020	3	2021
IOP V5 Best Artifacts Stress Testing	1	2021	3	2021
Conformance Verification Tool (V5) Development	2	2021	2	2022
IOP V6 Development	1	2022	4	2023
Conformance Verification Tool (V6) Updates	2	2023	1	2025
IOP V7 Development	1	2024	2	2025
Conformance Verification Tool (V7) Updates	3	2025	1	2027
IOP V8 Development	4	2025	4	2027
Conformance Verification Tool (V8) Updates	2	2027	4	2028
ROS-M Module SRR	3	2020	3	2020
ROS-M Module PDR	4	2020	4	2020
ROS-M Module CDR	1	2021	1	2021
ROS-M Module Build	1	2021	2	2021
ROS-M Module Stress Testing & Hardening	4	2020	2	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB3 / *Robotics Architecture*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ROS-M Module Registry & Repository software Drop	2	2021	2	2021
ROS-M (Agile Epics)	1	2022	4	2029
Common Specification Reference (CSR) Iterations	3	2022	4	2029
IOP V9 Development	3	2028	4	2029
Conformance Verification Tool (V9) Updates	3	2029	4	2030

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FB6 / *Squad Multipurpose Equipment Transport (SMET)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
FB6: *Squad Multipurpose Equipment Transport (SMET)*	-	10.159	19.839	17.253	-	17.253	15.967	16.137	10.306	8.465	0.000	98.126
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Small Multipurpose Equipment Transport (S-MET) system provides small units with a remote-controlled cargo/equipment transport and limited tactical resupply capability, increasing mission capabilities while reducing the individual Soldier load. The S-MET will be capable of carrying 2,500 pounds of equipment currently required to support Infantry and Engineer Platoons in the Infantry Brigade Combat Team (IBCT) for a 72-hour mission without resupply. It is also capable of generating 1-3KW of offload power, with an operational range of 20 miles in silent mode. S-MET will have open architectures, a remote control, support casualty evacuation, and integrate Modular Mission Payloads (MMP) and Technical Insertions. The Army Acquisition Objective (AAO) is 2,819 across S-MET Increment I (Inc I) and S-MET Increment II (Inc II). The Army Procurement Objective (APO) S-MET Inc I quantity is 624 under a Middle Tier of Acquisition Rapid Fielding (MTA-RF). The remaining AAO will be fulfilled through S-MET Inc I/II quantities.

FY 2025 RDTE Base dollars in the amount of $15.918 million funds the continuation of S-MET Inc II development, prototyping, and testing. S-MET Inc II is a follow-on program that will add capability and system maturity in the areas of platform autonomy, increased cyber and electromagnetic interference hardening, ballistic protections against kinetic threats, and improved battery safety for additional transportability modes. Program support to include labor, travel and miscellaneous expenses in support of these RDTE efforts will also be funded.

FY 2025 RDTE Base dollars in the amount of $1.335 million continues to support development, integration and testing of S-MET Modular Mission Payloads (MMP) and Technical Insertions for application onto S-MET platforms.

The total cost of the S-MET Inc I Middle Tier of Acquisition Rapid Fielding effort is $160.659 million from FY19 to FY24, including RDT&E ($26.355M) and Procurement ($134.304M). The S-MET Inc I MTA-RF program is fully funded across the Future Years Defense Program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: S-MET	6.700	4.227	-
Description: Small Multipurpose Equipment Transport (S-MET) Increment I			
FY 2024 Plans: FY 2024 RDTE Base dollars in the amount of $4.227 million continues to support the development, integration, and testing of Increment I Technical Insertions, Engineering Change Proposals, and Modular Mission Payloads (MMP) to increase mission capabilities and address requirements in the Abbreviated Capability Development Document (A-CDD). FY 2024 RDTE funds will			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
also continue to fund testing and development of logistics material required to support MMP efforts. Program support to include labor, travel and miscellaneous expenses in support of these RDTE efforts will also be funded. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 budget decreases related to ramp up efforts to support S-MET Increment II.			
Title: S-MET Inc II ***Description:*** Small Multipurpose Equipment Transport (S-MET) Increment II ***FY 2024 Plans:*** FY 2024 RDTE Base dollars in the amount of $15.612 million funds S-MET Increment II development, prototyping, test initiation, and performance and safety testing. ***FY 2025 Plans:*** FY 2025 RDTE Base dollars support the continuation of S-MET Increment II development, prototyping, and testing (performance and safety). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 budget increases related to ramp up efforts to support S-MET Increment II.	3.459	15.612	15.918
Title: S-MET MMPs / Technical Insertions ***Description:*** Small Multipurpose Equipment Transport (S-MET) Modular Mission Payloads (MMP) and Technical Insertions ***FY 2025 Plans:*** FY 2025 RDTE supports development, integration, testing of S-MET MMPs and Technical Insertions for future application to the S-MET platform. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Effort broken out separately for improved visibility in FY 2025. MMPs and Technical Insertions constitute ongoing planned efforts from prior years.	-	-	1.335
Accomplishments/Planned Programs Subtotals	10.159	19.839	17.253

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• R12154: *Squad Multipurpose Equipment Transport (SMET)*	29.709	45.890	24.334	-	24.334	28.506	61.605	61.639	64.197	0.000	315.880

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Small Multipurpose Equipment Transport (S-MET) Increment II will conduct a paper evaluation leading to a down selection to one or two Other Transactional Authority (OTA) vendor(s) under a Major Capability Acquisition (MCA) pathway. The Engineering Manufacturing & Development (EMD) phase will include the delivery of prototype systems, safety and performance testing, reliability, availability, and maintainability testing, and further development and integration of Modular Mission Payloads (MMP). Upon EMD completion, the government will competitively down select to one contractor for production.

It is the Army's intent to maximize the use of an Open Systems Architecture (OSA), as well as the approved Unmanned Ground Vehicle (UGV) interoperability profiles (IOP) for Small Multipurpose Equipment Transport (S-MET). Data collected up through development testing and the production effort will be utilized to provide cost savings for future Technical Insertions and Modular Mission Payloads (MMP) on to the S-MET program. Throughout the life of the program, the Army will continue to survey the marketplace opportunities for technology insertions and required Modular Mission Payloads (MMP), relying on competition to drive down costs.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Costs	MIPR	PM FP : Warren, MI	7.348	1.661	Oct 2022	1.591	Oct 2023	-		-		-	0.000	10.600	-
Increment II Program Management Costs	MIPR	PM FP : Warren, MI	-	0.672	Oct 2022	3.481	Oct 2023	2.459	Oct 2024	-		2.459	0.000	6.612	-
		Subtotal	7.348	2.333		5.072		2.459		-		2.459	0.000	17.212	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Increment I Prototypes	SS/FFP	General Dynamics Land Systems : Sterling Heights, MI	-	1.122	Mar 2023	-		-		-		-	0.000	1.122	-
Increment II SSEB	MIPR	PM FP : Warren, MI	-	1.248	Jan 2024	-		-		-		-	0.000	1.248	-
Increment II Development and Prototyping	C/FFP	Year Long Excursion : TBD	-	1.539	Jan 2024	10.546	Jan 2024	10.289	Jan 2025	-		10.289	0.000	22.374	-
Modular Mission Payloads (MMP)	MIPR	TBD : TBD	2.375	2.407	Jan 2023	0.500	Jan 2024	0.700	Jan 2025	-		0.700	0.000	5.982	-
Technical Insertions	MIPR	TBD : TBD	4.449	0.727	Feb 2023	1.116	Feb 2024	0.635	Jan 2025	-		0.635	0.000	6.927	-
		Subtotal	6.824	7.043		12.162		11.624		-		11.624	0.000	37.653	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Increment I ATEC Test Support	MIPR	Army Test Engineering Center : Various	6.780	0.783	Nov 2022	1.020	Nov 2023	-		-		-	0.000	8.583	-
Increment II ATEC Test Support	MIPR	Army Test Engineering Center : Various	-	-		1.585	Jun 2024	3.170	Feb 2025	-		3.170	0.000	4.755	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	6.780	0.783		2.605		3.170		-		3.170	0.000	13.338	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	20.952	10.159		19.839		17.253		-		17.253	0.000	68.203	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

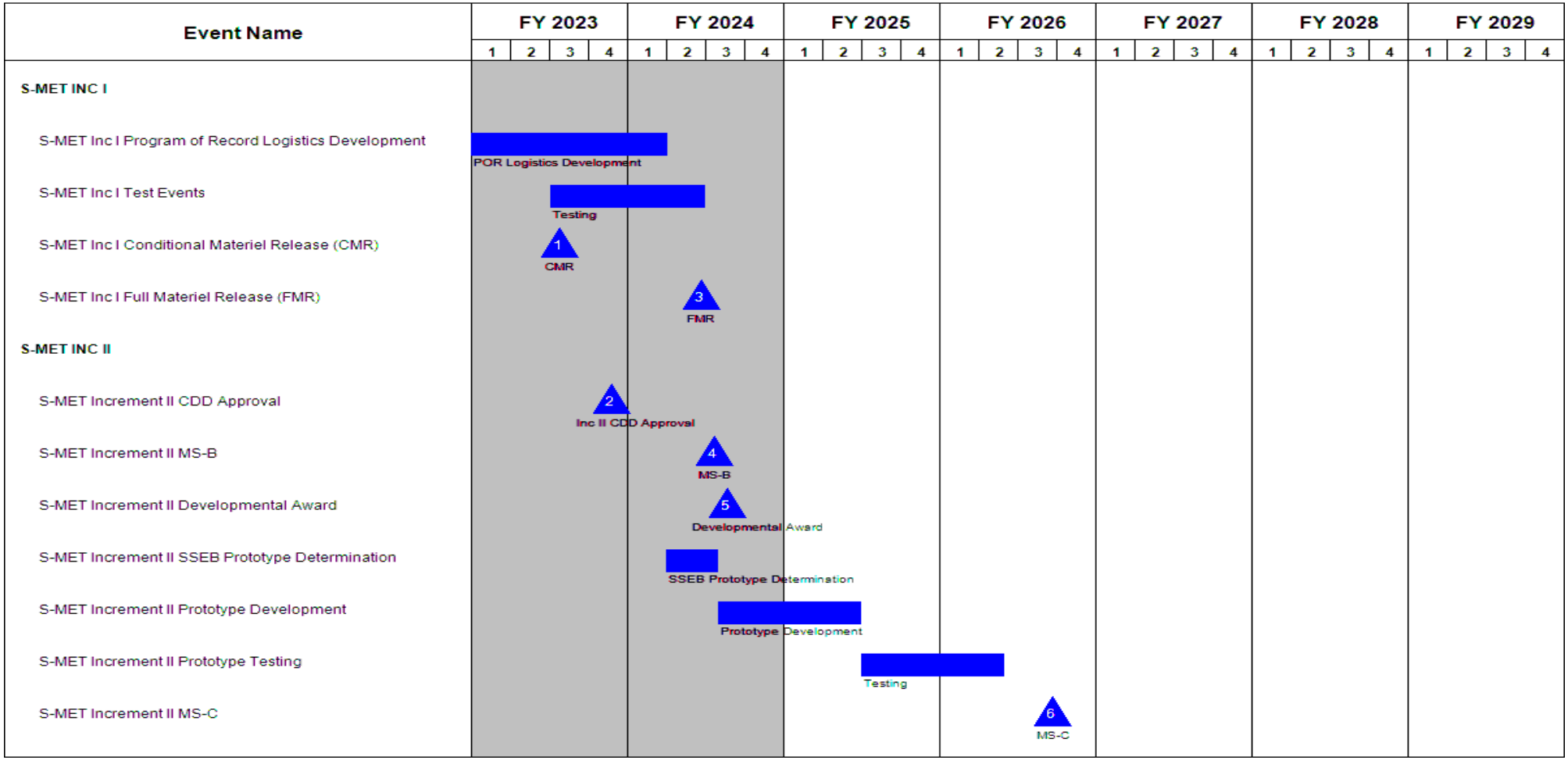

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

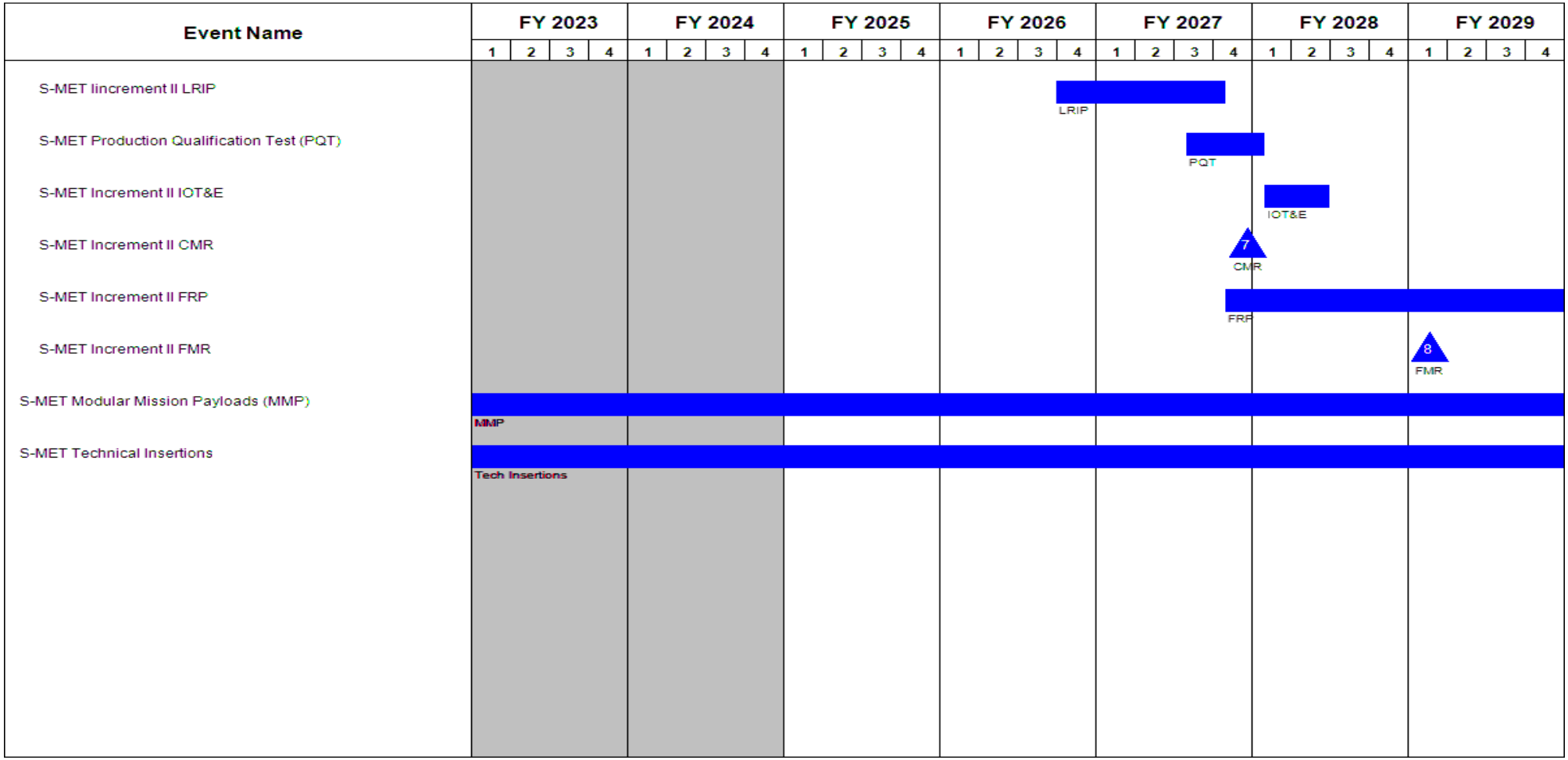

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
S-MET INC I	1	2018	4	2024
S-MET In I DT / OT	4	2018	4	2021
S-MET Technology Demo	1	2019	3	2019
S-MET MMP Assessment	3	2019	3	2019
S-MET 804 MTA Approval	4	2019	4	2019
S-MET Production Award	4	2020	4	2020
S-MET Inc I Program of Record Logistics Development	4	2020	1	2024
S-MET Inc I Test Events	3	2023	2	2024
S-MET Inc I Conditional Materiel Release (CMR)	3	2023	3	2023
S-MET Inc I Full Materiel Release (FMR)	2	2024	2	2024
S-MET INC II	1	2024	4	2029
S-MET Increment II CDD Approval	4	2023	4	2023
S-MET Increment II MS-B	3	2024	3	2024
S-MET Increment II Developmental Award	3	2024	3	2024
S-MET Increment II SSEB Prototype Determination	2	2024	3	2024
S-MET Increment II Prototype Development	3	2024	2	2025
S-MET Increment II Prototype Testing	3	2025	2	2026
S-MET Increment II MS-C	3	2026	3	2026
S-MET Iincrement II LRIP	4	2026	4	2027
S-MET Production Qualification Test (PQT)	3	2027	1	2028
S-MET Increment II IOT&E	1	2028	2	2028
S-MET Increment II CMR	4	2027	4	2027

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
S-MET Increment II FRP	4	2027	4	2029
S-MET Increment II FMR	1	2029	1	2029
S-MET Modular Mission Payloads (MMP)	1	2023	4	2029
S-MET Technical Insertions	1	2023	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FG8 / *Common Robotic Controller*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
FG8: *Common Robotic Controller*	-	4.940	7.678	8.390	-	8.390	9.398	10.443	11.821	11.939	0.000	64.609
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Robotic and Autonomous Command and Control effort (RAC2) (formerly Universal Robotic Control (URC)) is a software only program that is a critical capability for ground robotic vehicles: the Next Generation Combat Vehicle (NGCV), Optionally Manned Fighting Vehicle (OMFV), Robotic Combat Vehicle (RCV), and uncrewed aircraft systems: Short-Range Reconnaissance (SRR), and Long-Range Reconnaissance (LRR). RAC2 will provide the common information system for all Brigade and below Robotic and Autonomous Systems (RAS) Command and Control (C2). The RAC2 program meets the challenge of providing the C2 warfighting function to execute the US Army RAS Strategy in support of Multi-Domain Operations (MDO). RAC2 provides soldier and machine interfaces to establish and maintain positive C2 in all phases of combat and support operations, supported by a continuously developed software ecosystem. The capabilities of RAC2 provide a unified information system at the tactical edge enabling improved situational awareness and multi-domain maneuver.

FY 2025 RDTE Base dollars in the amount of $8.390 million will be utilized in the Execution Phase of the Software Acquisition Pathway. This effort will execute the development of the Minimum Viable Product (MVP) and the Minimum Viable Capability Release (MVCR) and Software Acquisition Pathway associated tasks. This phase will include deployment of iterative developed software to the operational environment, conducting value assessments with the user community to mature capability requirements, and providing technical training.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: RAC2 improves Soldier situational awareness while reducing cognitive load on Soldiers and the robotics portfolio logistics footprint	4.940	7.678	8.390
Description: The Robotic and Autonomous Command and Control (RAC2) information system improves situational awareness, multi-domain maneuvers, and deployment of lethal and nonlethal effects utilizing the entire Robotics and Autonomous Systems (RAS) portfolio.			
FY 2024 Plans: FY 2024 RDTE funding in the amount of $7.678 million will be utilized for System Engineering and Program Management (SEPM), Software Engineering Development and Licensing to support the execution phase of the Software Acquisition Pathway. This effort will execute the development of the Minimum Viable Product (MVP) and Minimum Viable Capability Release (MVCR) and Software Acquisition Pathway associated tasks. This Phase will include deployment of iterative developed software to the operational environment, conducting value assessments with user community to mature capability requirements, and provide technical training.			
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FG8 / *Common Robotic Controller*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 RDTE will be utilized in the Execution Phase of the Software Acquisition Pathway. This effort will execute the development of the Minimum Viable Product (MVP) and the Minimum Viable Capability Release (MVCR) and Software Acquisition Pathway associated tasks. This phase will include deployment of iterative developed software to the operational environment, conducting value assessments with user community to mature capability requirements, and provide technical training. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to 2025 budget increase is on-boarding new platforms for software development.			
Accomplishments/Planned Programs Subtotals	4.940	7.678	8.390

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The RAC2 is in the planning phase of the Software Acquisition Pathway per Acquisition Decision Memorandum (ADM) signed 26 April 2022.

Robotic and Autonomous Command and Control (RAC2) Software Capabilities Need Statement (CNS) dated 31 March 2022 was approved by the Robotic Requirements Division (RRD) Maneuver-Capabilities Development Integration Directorate (M-CDID).

The RAC2 CNS defines critical capabilities for Battalion (BN) and below Robotic and Autonomous Systems (RAS) Command and Control (C2) software (SW) that enable the operational RAS System of Systems (SoS). The procedures, infrastructure, developmental environment, and capabilities developed for RAC2 will provide the basis for future RAS C2 SW development as well as integration into legacy and future air/ground platforms.

Project Manager Uncrewed Aircraft Systems (PM-UAS), as the materiel developer, will coordinate the Army's combined efforts for the development of RAS C2. The RRD will serve as the lead capability developer for RAC2. This partnership will prioritize development of detailed user needs and will integrate these needs into the system's capabilities. PM UAS will also provide annual RAC2 CNS user updates, in partnership with RRD, and in-line with the jointly developed User Agreement (UA).

PM UAS will develop and maintain a product roadmap and product backlog for each of the main capabilities based on the RAC2 UA. PM UAS will seek to gain user feedback through a series of virtual/simulated or live/field test events. PM UAS will utilize user feedback from these events to inform prioritization for the product roadmaps and backlogs for each capability.

PM UAS will implement software for each capability, which builds on Modular Open Systems Approach (MOSA) principles and in accordance with Inter-Operability Protocols (IOPs).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FG8 / *Common Robotic Controller*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management support	C/TBD	Various : Multiple	3.984	2.748	Nov 2022	2.241	Jan 2024	0.839	Jan 2025	-		0.839	0.000	9.812	-
SBIR/STTR	TBD	TBD : TBD	-	-		-		0.000	Dec 2024	-		0.000	-	-	-
		Subtotal	3.984	2.748		2.241		0.839		-		0.839	0.000	9.812	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Manufacturing & Development	C/CPFF	TBD : TBD	0.517	-		3.542	Jan 2024	4.791	Jan 2025	-		4.791	0.000	8.850	-
Software support	Various	Various : Various	1.284	-		1.895	Jan 2024	1.017	Jan 2025	-		1.017	0.000	4.196	-
Risk Reduction/ Engineering Studies	TBD	TBS : TBD	0.730	2.192	Feb 2023	-		1.743	Jul 2025	-		1.743	0.000	4.665	-
		Subtotal	2.531	2.192		5.437		7.551		-		7.551	0.000	17.711	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.515	4.940		7.678		8.390		-		8.390	0.000	27.523	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FG8 / *Common Robotic Controller*

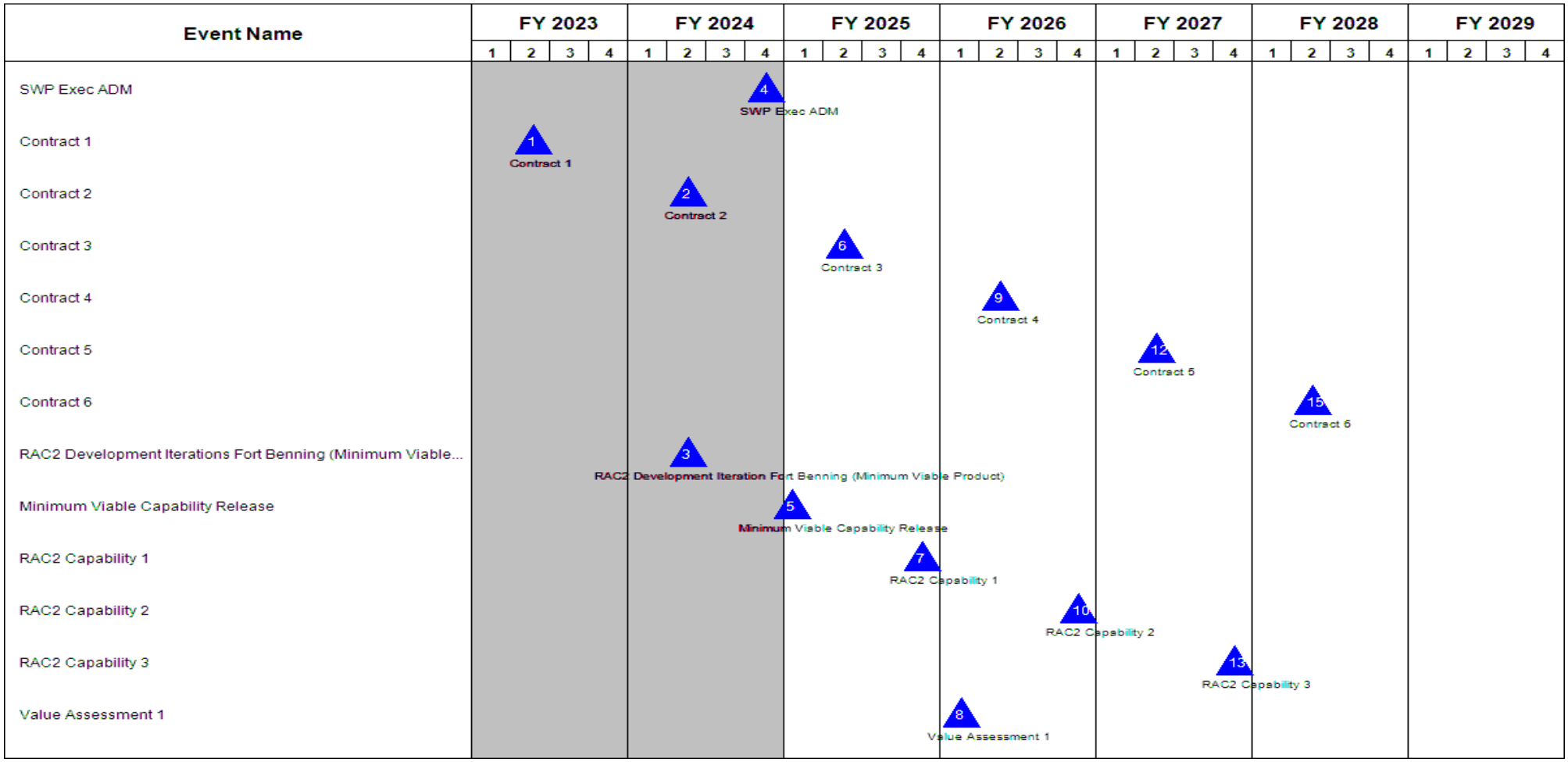

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FG8 / *Common Robotic Controller*

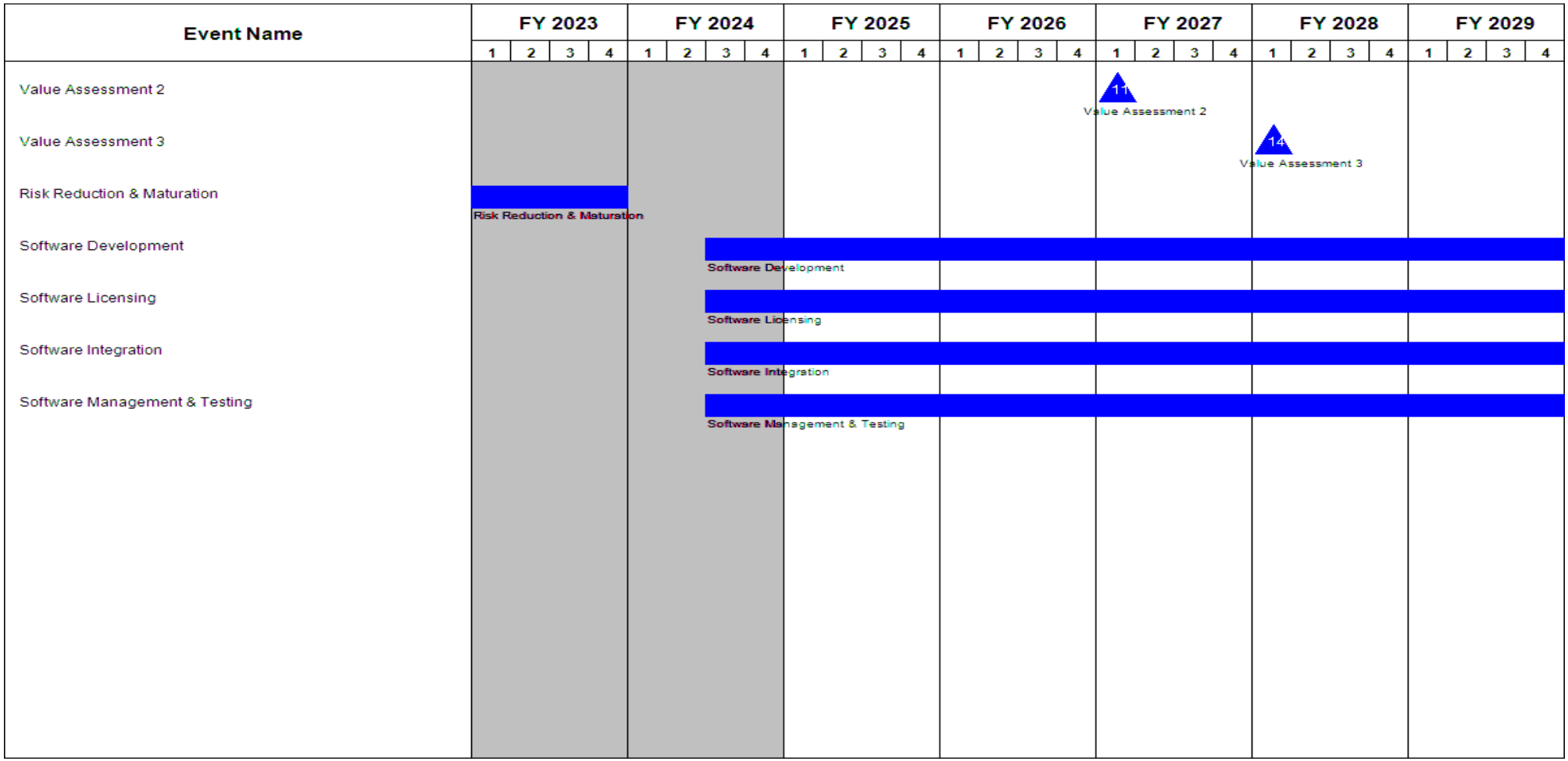

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FG8 / *Common Robotic Controller*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SWP Plan ADM	3	2022	3	2022
SWP Exec ADM	4	2024	4	2024
CNS	3	2022	3	2022
Contract 1	2	2023	2	2023
Contract 2	2	2024	2	2024
Contract 3	2	2025	2	2025
Contract 4	2	2026	2	2026
Contract 5	2	2027	2	2027
Contract 6	2	2028	2	2028
RAC2 Development Iterations Fort Benning (Minimum Viable Product)	2	2024	2	2024
Minimum Viable Capability Release	1	2025	1	2025
RAC2 Capability 1	4	2025	4	2025
RAC2 Capability 2	4	2026	4	2026
RAC2 Capability 3	4	2027	4	2027
Value Assessment 1	1	2026	1	2026
Value Assessment 2	1	2027	1	2027
Value Assessment 3	1	2028	1	2028
Risk Reduction & Maturation	2	2022	4	2023
Software Development	3	2024	4	2030
Software Licensing	3	2024	4	2030
Software Integration	3	2024	4	2030
Software Management & Testing	3	2024	4	2030