Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	213.726	280.107	192.310	-	192.310	120.410	99.663	99.658	100.628	Continuing	Continuing
280: *RECOV VEH IMPROV PROG*	-	121.811	108.954	59.935	-	59.935	8.036	-	-	-	Continuing	Continuing
330: *Abrams Tank Improve Prog*	-	61.039	120.308	61.229	-	61.229	98.274	85.285	85.279	86.109	Continuing	Continuing
371: *Bradley Improve Prog*	-	8.773	19.878	-	-	-	-	-	-	-	Continuing	Continuing
EE2: *Stryker Improvement*	-	22.103	30.967	71.146	-	71.146	14.100	14.378	14.379	14.519	Continuing	Continuing

A. Mission Description and Budget Item Justification

Program Element (PE) 0203735A Combat Vehicle Improvement Programs corrects vehicle deficiencies identified during Army operations; continues technical system upgrades to include the integration of applicable technologies on ground systems; addresses needed evolutionary enhancements to tracked combat vehicles; and develops technology improvements which have application to or insertion opportunities across multiple Ground Combat Systems vehicles. This PE provides combat effectiveness and Operating and Support (O&S) cost reduction enhancements for the Abrams tanks, Bradley Fighting Vehicles and Stryker Family of Vehicles (FOVs) through a series of product improvements.

The strategy for Abrams and Bradley will focus on incrementally delivering capability to the warfighter to meet both near-term limitations as well as mitigating gaps and maintaining combat overmatch in the future. This effort was approved by the Army Acquisition Executive in 3rd Quarter (QTR) Fiscal Year (FY) 2011.

The Recovery Vehicle Improvement program is an Engineering Change Proposal (ECP) that will allow the current recovery vehicle to regain Single Vehicle Recovery (SVR) for the heaviest tracked combat vehicle as defined in the Heavy Equipment Recovery Combat Utility Lift and Evacuation System (HERCULES) Enhanced M88A2E1 Capability Production Document Increment 2 dated 20 January 2017. The fielded M88A2 HERCULES lacks the necessary power, weight, and braking ability to safely support the recovery of the M1A2SEPv2 in all situations and with the next generation M1A2SEPv3 weight growth, the problem will get worse. The M88A3 vehicles will bring back the operational capability of the single vehicle recovery. The increased winching and lifting capability accommodates all 80 ton Abrams variants. Without this increased capability, units must use two M88A2 Medium Recovery Vehicles to perform the necessary spectrum of recovery operations.

The Abrams M1A2 SEP V2 and M2/M3A3 Bradley Fighting Vehicles are at or exceed Space, Weight, and Power-Cooling (SWaP-C) limitations. In order to host and restore lost platform capability, the Abrams Tank and Bradley Fighting Vehicle programs will execute a series of ECPs to support the current embedded systems and to facilitate integration of technologies currently in development under other existing Programs of Record. The ECPs are not intended to exceed the operational capability outlined in current system requirements documents, but rather to ensure that the existing system performance is not further degraded and that Army mission equipment packages can be integrated on the Abrams and Bradley Platforms.

Stryker Improvement will address the development of Lethality, Survivability, Mobility, Network Lethality, and Communication, Command and Control (C3) improvements within the Stryker FOVs. Principal development efforts include upgrades associated with the Stryker Double V-Hull A1 (DVH A1) Engineering Change Proposal (ECP),

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0203735A *I Combat Vehicle Improvement Programs*

Stryker 30mm Infantry Carrier Vehicle Dragoon (ICVD) Operational Needs Statement (ONS), Common Remotely Operated Weapon Station-Javelin (CROWS-J) ONS, Stryker Survivability Enhancement, and Stryker Lethality ECPs. DVH A1 ECP upgrades restore Stryker DVH Space, Weight, and Power-Cooling (SWaP-C) lost as a result of incorporating vehicle changes to counter threats encountered during deployment operations while allowing the future network to be hosted without further degradation in vehicle protection and mobility. The Stryker 30mm ICVD and CROWS-J ONS efforts addressed Urgent Operational Need to increase the lethality of Stryker Infantry Carrier Vehicles (ICV) within the United States Army European Command (USAREUR). The 30mm ICVD ONS effort integrates a 30mm-equipped weapon station providing, USAREUR with precision direct firepower to overwhelm the enemy in encounter actions and suppressive fire to preserve mounted and dismounted freedom of movement. The Stryker Survivability Enhancements address evolving threats by assessing survivability improvements, to include but not limited to, 360 Situational Awareness, reactive armor tiles, and integration of emerging and existing technologies and other Stryker based platform solutions. The Stryker platform will also include future Mission Equipment Package (MEP) integration that includes but not limited to the Fire Direction Center (FDC) providing an on-the move capability that processes voice and digital data while maintaining contact with the indirect fire team over extended distances. Stryker Lethality ECP efforts (ICVVA1-30mm, CROWS-J, Anti-Tank Guided Missile (ATGM), and other capabilities) focus on the integration of a suite of complementary MEP lethality upgrades that will improve the suppressive fire and armored vehicle engagement capabilities across the Army's Stryker Brigade Combat Teams (SBCTs). Additionally, the Lethality MEP upgrades will address existing obsolescence issues of the Remote Weapon Station (RWS) with the CROWS and CROWS-J upgrade. The ATGM ECP will upgrade the Modified Improved Target Acquisitions System (MITAS), incorporating a far target locator and enabling the dissemination of target acquirement information utilizing networked lethality, providing a common operating picture. Stryker Network Modernization will formalize the system integration of the Integrated Tactical Network (ITN), Integrated Visual Augmentation System (IVAS), and Tactical Cloud Package (TCP) as part of Mounted Capability Set 23 (MCS23) for the Stryker platform. Upgrades of the Stryker flat-bottom hull and DVH variants were completed to mitigate known system deficiencies.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	213.728	211.523	0.000	-	0.000
Current President's Budget	213.726	280.107	192.310	-	192.310
Total Adjustments	-0.002	68.584	192.310	-	192.310
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.393			
• Congressional Rescissions	-	-			
• Congressional Adds	-	70.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.002	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	192.310	-	192.310
• FFRDC Transfer	-	-0.023	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 330: *Abrams Tank Improve Prog*		
Congressional Add: *CONGRESSIONAL ADD - Abrams Modernization*	-	65.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0203735A *I Combat Vehicle Improvement Programs*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Congressional Add: *CONGRESSIONAL ADD - Next Generation Auxiliary Power Unit*	-	5.000
Congressional Add Subtotals for Project: 330	-	70.000
Congressional Add Totals for all Projects	-	70.000

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*	Project (Number/Name) 280 / *RECOV VEH IMPROV PROG*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
280: *RECOV VEH IMPROV PROG*	-	121.811	108.954	59.935	-	59.935	8.036	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The M88A2 Heavy Equipment Recovery Combat Utility Lift and Evacuation System (HERCULES), designated as an Acquisition Category (ACAT) IC program on 15 Jun 2016, has been providing towing, winching, and hoisting operations to support battlefield recovery operations and evacuation of heavy tanks and other tracked combat vehicles since its production and deployment in 1998. The M88A2 HERCULES recovers tanks mired to different depths, removes M1 Abrams turrets and power packs, and uprights overturned heavy combat vehicles. Currently, the M88A2 is unable to safely perform Single Vehicle Recovery (SVR) of the Abrams tank in all conditions, due to added weight/survivability improvements made to the tank. In order to ensure single vehicle recovery is met, Project Manager- Main Battle Tank Systems (PM-MBTS) will develop and integrate Engineering Change Proposal (ECP) technologies for the M88A2 HERCULES through an initiative to meet its operational requirements of single vehicle recovery throughout its life cycle. This initiative is not intended to exceed current operational capability, but will instead regain single vehicle recovery capability of the heaviest tracked combat vehicle.

Analyses conducted to date suggests that upgrades to the M88A2 track, suspension, hydraulics, engine, transmission and other related components are required to meet single vehicle recovery for the heaviest tracked combat vehicle.

Fiscal Year (FY) 2023 Base dollars will fund preparations for USG prototype testing and continue the Program Management Office support; to include labor, training, travel, supplies, and equipment to effectively manage the program. Program starts Government System Level test and verification, along with Logistics Demonstration activities within FY 2023. Program will conduct system verification review to ensure readiness to proceed to production. The system verification review will be followed by production readiness review at the end of FY23.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Program Management Office (PMO) Support	1.486	1.971	1.599
Description: PMO support includes Systems Engineering, Logistics, Government and in-house support Contractor salaries, travel and other support costs required to effectively manage the program.			
FY 2022 Plans: The program continues Other Transaction Authority (OTA) project oversight, supports technical solution development for continued M88A3 prototype builds, support for system-level verification and test, and preparation of production contract(s).			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 280 / *RECOV VEH IMPROV PROG*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Continue Government Systems Engineering, Logistics, test support at multiple sites and Program Management office support in FY 2022. This will include labor, training, travel, supplies, and equipment to effectively manage the program. ***FY 2023 Plans:*** The program continues OTA project oversight, supports completion of the last of (8) M88A3 prototype builds. The program then transitions into test and evaluation support for system-level verification and test, and preparation of production contract(s). Continue Government Systems Engineering, Logistics, test support at multiple sites and Program Management office support in FY 2023. This will include labor, training, travel, supplies, and equipment to effectively manage the program. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The M88A3 program is transitioning from development and prototype manufacturing to primarily test and logistics product development. Accordingly, there will be substantial decreases to the M88A3 program management support and systems engineering support efforts.			
Title: Product Development ***Description:*** Design and Development of ECPs. ***FY 2022 Plans:*** The program completes development of the M88A3 prototype builds, contractor component qualification and systems shakedown testing to support (8) M88A3 prototype vehicle Government Acceptance. Program starts Government System Level test and verification in FY 2023. ***FY 2023 Plans:*** The program continues OTA project oversight, supports completion of the last of (8) M88A3 prototype builds, support for system level verification and test execution, identification of early order material, user touch points and preparation of production contract(s). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 will represent a significant drawdown in product development as the technical configuration stabilizes heading into the test phase. Prototype builds will be complete early in FY 2023, and the program will transition from heavy development to test support, test induced corrective actions, along with a ramp up in Logistics product development and preparations for initial production.	119.828	97.859	44.220
Title: Test and Evaluation ***Description:*** The Army is conducting Developmental Test and Evaluation (DT&E) on (8) prototype M88A3 vehicles to confirm Single Vehicle Recovery capability for an 80T Main Battle Tank. Test data supports an evaluation of the M88A3 for use in a production decision in FY 2023. DT&E for the M88A3 includes safety testing, automotive performance, recovery, transportability,	0.497	5.147	14.116

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 280 / *RECOV VEH IMPROV PROG*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Reliability Availability and Maintainability (RAM), Electromagnetic Interference (EMI), Cybersecurity, Survivability-Live Fire Test & Evaluation (LFT&E), environmental effects, logistics demonstration, and Soldier Test Point. ***FY 2022 Plans:*** The Contractor and USG Test Readiness Reviews, as well as all associated M88A3 test planning and preparations, will occur in FY 2022. Vehicle inspection and characterization, instrumentation, and operator training will commence upon arrival of prototype vehicles at both Aberdeen Test Center (ATC) and Yuma Proving Grounds (YPG), followed by the startup of Automotive Performance and RAM testing. Modeling and Simulation (M&S) in support of LFT&E will begin upon receipt of technical data at Test Readiness Review (TRR). Technical manual validation will also start in FY 2022. ***FY 2023 Plans:*** The USG will continue test planning and preparation activities started in FY 2022, leading into the full M88A3 test program executed during FY 2023. The test program will consist of the DT&E effort, conducted at both Aberdeen Test Center (ATC) and Yuma Proving Grounds (YPG). Technical Manual Validation and the Logistics Demonstration will also occur in FY 2023, both at the contractor facility. Logistics Demo will take place from 4QFY23-1QFY24. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase in test efforts are due to the execution of the M88A3 test program involving (8) vehicles; this includes the DT&E and Logistics efforts outlined above. Efforts started in FY 2022 (such as Live Fire M&S) will be completed in FY 2023 and support the evaluation of the system.			
Title: Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Accomplishments/Planned ***Description:*** Funding transferred in accordance with Title 15 USC 638. ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC 638. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638.	-	3.977	-
Accomplishments/Planned Programs Subtotals	121.811	108.954	59.935

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• GA0570: *Improved Recovery Vehicle (M88A2 HERCULES)*	-	52.059	138.759	-	138.759	183.472	194.793	195.975	187.909	0.000	952.967

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 280 / *RECOV VEH IMPROV PROG*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• G80571: *M88 FOV MODS*	18.382	-	0.000	-	0.000	-	-	-	-	0.000	18.382

Remarks

D. Acquisition Strategy

The Project Manager (PM) for Main Battle Tank Systems (MBTS) is executing an Engineering Change Proposal (ECP) to regain single vehicle recovery capability of the M88A2 HERCULES vehicle. The strategy utilizes the Detroit Arsenal Automotive Other Transaction Authority (DA2 OTA) which competitively awarded a single contract to develop, integrate and produce (8) prototype vehicles entering testing in FY 2022. After achieving OTA success criteria, a contract award using procurement dollars procures up to (70) initial production vehicles, as well as the procurement of hardware kits/components comprised of engines, transmissions, track and suspensions. Follow on M88A3 production will utilize a Federal Acquisition Regulation (FAR) based contract through the defined Army Acquisition Objective (AAO). The M88A2 HERCULES production vehicles continue fielding to Units through FY 2023.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*	Project (Number/Name) 280 / *RECOV VEH IMPROV PROG*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	Various : Various	-	-		3.977	Mar 2022	-		-		-	0.000	3.977	-
		Subtotal	-	-		3.977		-		-		-	0.000	3.977	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	Various	BAE Systems : TBD	95.771	119.828	Oct 2020	97.859	Oct 2021	44.220	Oct 2022	-		44.220	0.000	357.678	-
		Subtotal	95.771	119.828		97.859		44.220		-		44.220	0.000	357.678	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Office (PMO) Support	MIPR	PMO Support Offices, Ricardo Defense, DCS and Army Research Labs (ARL) : Various	5.375	1.486	Jan 2021	1.971	Dec 2021	1.599	Dec 2022	-		1.599	0.000	10.431	-
		Subtotal	5.375	1.486		1.971		1.599		-		1.599	0.000	10.431	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Aberdeeen Test Center (ATC), Yuma Test Center (YTC) : Various	0.512	0.497	May 2021	5.147	Aug 2022	14.116	Feb 2023	-		14.116	0.000	20.272	-
		Subtotal	0.512	0.497		5.147		14.116		-		14.116	0.000	20.272	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*	Project (Number/Name) 280 / *RECOV VEH IMPROV PROG*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	101.658	121.811		108.954		59.935		-		59.935	0.000	392.358	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 280 / *RECOV VEH IMPROV PROG*

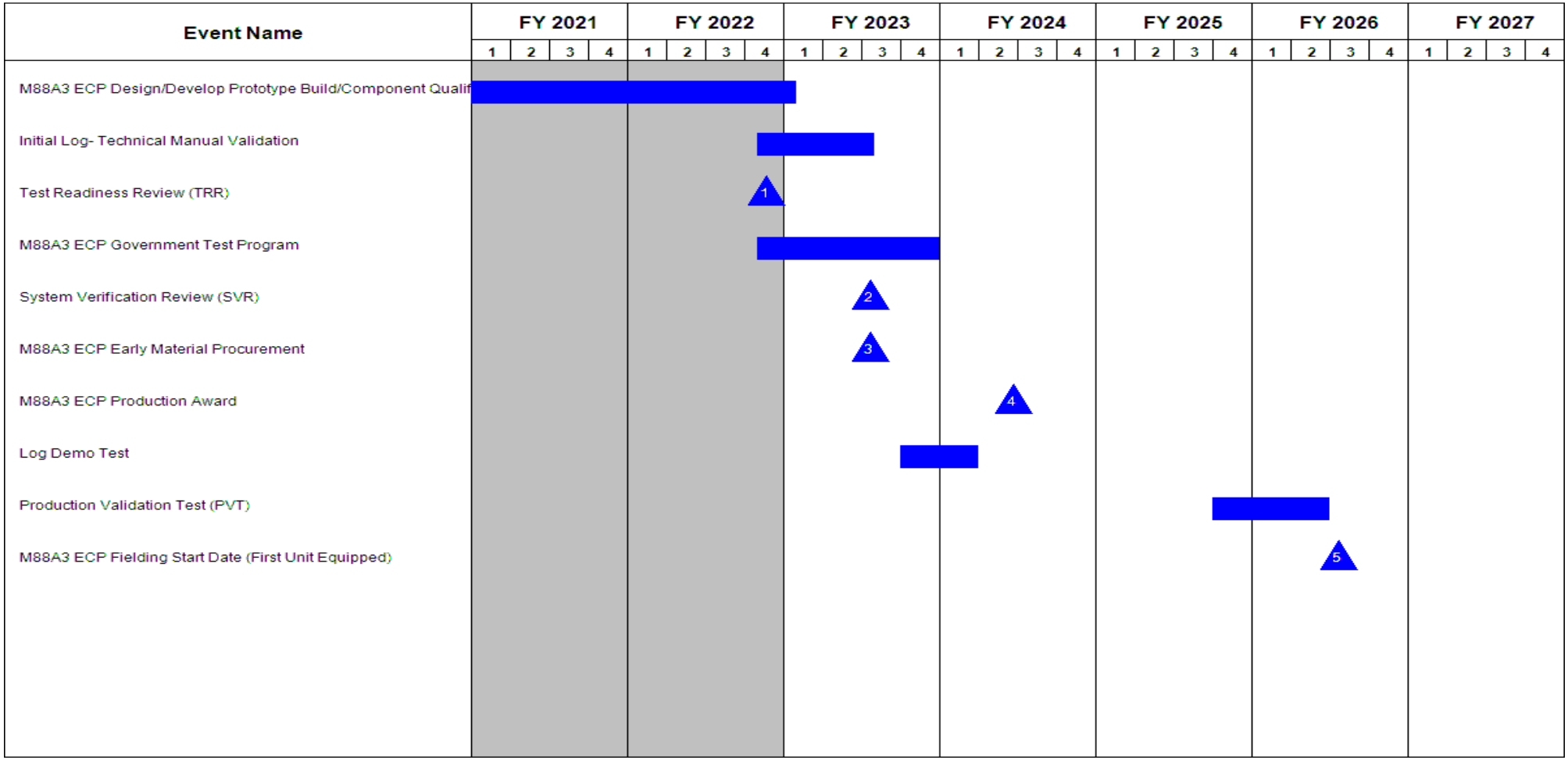

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 280 / *RECOV VEH IMPROV PROG*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
M88A3 ECP Design/Develop Prototype Build/Component Qualification	4	2019	1	2023
Initial Log- Technical Manual Validation	4	2022	3	2023
Test Readiness Review (TRR)	4	2022	4	2022
M88A3 ECP Government Test Program	4	2022	4	2023
System Verification Review (SVR)	3	2023	3	2023
M88A3 ECP Early Material Procurement	3	2023	3	2023
M88A3 ECP Production Award	2	2024	2	2024
Log Demo Test	4	2023	1	2024
Production Validation Test (PVT)	4	2025	2	2026
M88A3 ECP Fielding Start Date (First Unit Equipped)	3	2026	3	2026

Note

Survivability, lethality and vulnerability (SLV) Testing

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*	Project (Number/Name) 330 / *Abrams Tank Improve Prog*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
330: *Abrams Tank Improve Prog*	-	61.039	120.308	61.229	-	61.229	98.274	85.285	85.279	86.109	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Army has approved Engineering Change Proposals (ECPs) for the Abrams Main Battle Tank to restore lost capability, host inbound technologies, and to meet objective performance requirements called out in approved platform requirements documents. The strategy for Abrams will focus on incrementally delivering capability to the warfighter to meet both near-term limitations as well as mitigating gaps and maintaining combat overmatch in the future. This approach was approved by the Army Acquisition Executive in 3rd Quarter (Q) Fiscal Year (FY) 2011 and revalidated in an AROC decision in 2018.

The Abrams vehicle is at or exceeds Space, Weight, and Power-Cooling (SWaP-C) limitations. In order to restore lost platform capability, the Abrams Tank will execute a series of ECPs to support the current embedded systems and to facilitate integration of technologies currently in development. The ECPs are not intended to exceed the operational capability outlined in current system requirements documents, but rather to ensure that the existing system performance is not further degraded and that Army mission equipment packages can be integrated on the Abrams. The ECPs will incorporate lost power generation and distribution technologies, lethality improvements, force protection and survivability improvements to counter evolving threats to include, but not limited to Active Protection Systems, technologies to mitigate obsolescence issues, in-bound technologies under development, technologies to decrease the overall weight of the tank, and technologies in support of any validated Army requirement.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Abrams Lethality Engineering Change Proposal M1A2SEP V4/ECP 1B	52.646	40.530	46.117
Description: The Abrams SEP (System Enhancement Program) v4 program consists of lethality improvements primarily focused on the integration of 3rd Generation Forward Looking Infrared (FLIR). Additional improvements include a Laser Warning Receiver (LWR), Improved Thermal Management System (ITMS), and target acquisition sensor upgrades consisting of inclusion of color cameras, laser capabilities, and image processing. Other potential improvements include vehicle smoke generation, survivability enhancements, signature management improvements, embedded training enhancements, 360 Situational Awareness cameras, and weight reduction efforts. Trade studies, analysis and technology maturation will be performed to evaluate prospective improvements, along with obsolescence mitigation, and incorporation of inbound technologies currently under development.			
FY 2022 Plans: As a result of late contractor deliveries the prototype vehicle build and component qualification testing will continue longer than originally expected and delay the start of Original Equipment Manufacturer (OEM) vehicle testing until late FY 2022.			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
SEPv4 program completes contractor led OEM testing and begins Army developmental test and evaluation in 3QFY23. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase in funding for FY23 is to complete verification and validation activities that have been delayed due to late contractor hardware deliveries.			
Title: Program Management Office (PMO) Support ***Description:*** PMO Support includes Systems Engineering and Government and Contractor salaries, travel and other support costs required to effectively manage the program. ***FY 2022 Plans:*** Continue Government Systems Engineering and Program Management office support in FY 2022. This will include labor, training, travel, supplies, and equipment to effectively manage the program. ***FY 2023 Plans:*** Continue Government Systems Engineering and Program Management office support in FY 2023. This will include labor, training, travel, supplies, and equipment to effectively manage the program. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Program support decreased as program enters developmental test phase.	3.515	3.850	3.674
Title: Test & Evaluation - Engineering Change Proposal M1A2SEP V4/ECP 1B ***Description:*** Comprises government test and evaluation of the SEP (System Enhancement Program) v4. Testing includes developmental, operational, and live fire test and evaluation. Government test modeling and simulation, detailed vehicle test planning, and initial test site preparation are also included. ***FY 2022 Plans:*** Finalize preparation and planning of SEPv4 testing and continue live fire modeling and simulation. Begin test site support of OEM testing. ***FY 2023 Plans:*** SEPv4 program completes OEM testing and begin government developmental test and evaluation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increased to complete OEM test and begin government developmental test and evaluation.	2.402	2.988	9.088
Title: Lethality and Survivability Enhancements	2.476	1.080	2.350

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 330 / *Abrams Tank Improve Prog*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Enhances lethality primarily through integration of improved munitions (smart rounds), gun turret drive improvements, cannon improvements, image processing enhancements and advanced algorithms. Survivability enhancements will focus on improved sensors, 360 Situational Awareness, active protection systems, armor improvements, and unmanned system defeat. Mobility enhancements will focus on efforts to reduce the weight of the tank to ensure operational mobility. ***FY 2022 Plans:*** Abrams will initiate trade study to identify and evaluate technology that has the potential to reduce the weight of the tank to ensure operational mobility. Abrams to conduct trade study to investigate potential technology integration pathways that may reduce the increasing cognitive burden upon tank crew. Abrams continues integration of survivability enhancements. ***FY 2023 Plans:*** Abrams continues integration of survivability enhancements and further investigates technologies that may reduce crew cognitive burden and overall weight of tank to ensure operational mobility. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Minimal increase to account for results of ongoing trade studies and enhancements.			
Title: Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Accomplishments/Planned ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC 638. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638.	-	1.837	-
Title: FFRDC ***FY 2022 Plans:*** FY22 FFRDC tax to program ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY23 FFRDC tax is TBD.	-	0.023	-
Accomplishments/Planned Programs Subtotals	61.039	50.308	61.229

	FY 2021	FY 2022
Congressional Add: CONGRESSIONAL ADD - Abrams Modernization	-	65.000

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 330 / *Abrams Tank Improve Prog*

	FY 2021	FY 2022
FY 2022 Plans: The Congressional Add of $65M reflects an increase for Abrams Modernization efforts to include, but not limited to: Unmanned Turret, Autoloader and Automated Ammunition Handling System, Hydro-Pneumatic suspension, Integration APS, and Hybrid Electric Drive.		
Congressional Add: CONGRESSIONAL ADD - Next Generation Auxiliary Power Unit ***FY 2022 Plans:*** The Congressional Add of $5M reflects an increase to evaluate integration of Hydro-Pneumatic Suspension Units onto the Abrams chassis.	-	5.000
Congressional Adds Subtotals	-	70.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• GA0700: *M1 Abrams Tank (MOD)*	375.107	-	0.000	-	0.000	-	-	-	-	0.000	375.107
• GA0750: *Abrams Upgrade Program*	968.094	1,145.837	656.340	-	656.340	814.234	1,072.434	1,046.346	1,049.429	Continuing	Continuing

Remarks

D. Acquisition Strategy

Research & Development Contract - Sole Source, Cost Plus Incentive Fee (CPIF); SEP v4 - Research & Development Contract - Sole Source, CPIF.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*	Project (Number/Name) 330 / *Abrams Tank Improve Prog*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Accomplishments	TBD	TBD : TBD	-	-		1.837	Apr 2022	-		-		-	0.000	1.837	-
FFRDC	TBD	TBD : TBD	-	-		0.023		-		-		-	0.000	0.023	-
		Subtotal	-	-		1.860		-		-		-	0.000	1.860	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Abrams SEPV3	SS/CPIF	General Dynamics Land Systems : Sterling Heights, MI	347.372	-		-		-		-		-	0.000	347.372	-
SEPV3 Training Device Upgrades	MIPR	PEO, STRI : Orlando, FL	4.252	-		-		-		-		-	0.000	4.252	-
Abrams SEPV4	SS/CPIF	General Dynamics Land Systems : Sterling Heights, MI	319.313	52.646	Feb 2021	40.530	Feb 2022	46.117	Nov 2022	-		46.117	Continuing	Continuing	Continuing
Advanced Multi-Purpose (AMP) Round	SS/CPIF	General Dynamics Land Systems : Sterling Heights, MI	7.128	-		-		-		-		-	0.000	7.128	-
Lethality and,Survivability Enhancements	Option/ Various	Various : Various	11.885	2.476	Mar 2021	1.080	Jan 2022	2.350	Apr 2023	-		2.350	Continuing	Continuing	Continuing
CONGRESSIONAL ADD - Abrams Mobility	TBD	General Dynamics Land Systems : Sterling Heights, MI	-	-		65.000	Jun 2022	-		-		-	0.000	65.000	-
CONGRESSIONAL ADD - Auxiliary Power Unit	TBD	TBD : TBD	-	-		5.000	Jun 2022	-		-		-	0.000	5.000	-
		Subtotal	689.950	55.122		111.610		48.467		-		48.467	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*	Project (Number/Name) 330 / *Abrams Tank Improve Prog*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Office (PMO) Support	MIPR	PMO Support Offices : TACOM, GVSC, ARDEC, ARL, Picatinny	92.458	3.515	Jan 2021	3.850	Jan 2022	3.674	Dec 2022	-		3.674	Continuing	Continuing	Continuing
Program Management Office (PMO) Support - Survivability Enhancements	MIPR	PMO Support Offices : GVSC/ Various	2.207	-		-		-		-		-	0.000	2.207	-
FY 2018 NDAA SEC 825 MDAP Cost Overrun	TBD	TBD : TBD	0.160	-		-		-		-		-	0.000	0.160	-
		Subtotal	94.825	3.515		3.850		3.674		-		3.674	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Testing / SEPV4	MIPR	Aberdeen Proving Ground; Yuma Proving Ground; White Sands Missile Range, : Various	62.075	2.402	Jan 2021	2.988	Jun 2022	9.088	Nov 2022	-		9.088	Continuing	Continuing	Continuing
Government Testing SEPV3	MIPR	Various : Various	2.721	-		-		-		-		-	0.000	2.721	-
Contractor Testing SEPV3	SS/CPIF	General Dynamics Land Systems : Various	40.563	-		-		-		-		-	0.000	40.563	-
Contractor Testing SEPV4	SS/CPIF	General Dynamics Land Systems : Various	2.029	-		-		-		-		-	0.000	2.029	-
Government Testing - Survivability Enhancements	Various	Various : Various	24.491	-		-		-		-		-	0.000	24.491	-
		Subtotal	131.879	2.402		2.988		9.088		-		9.088	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*	Project (Number/Name) 330 / *Abrams Tank Improve Prog*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

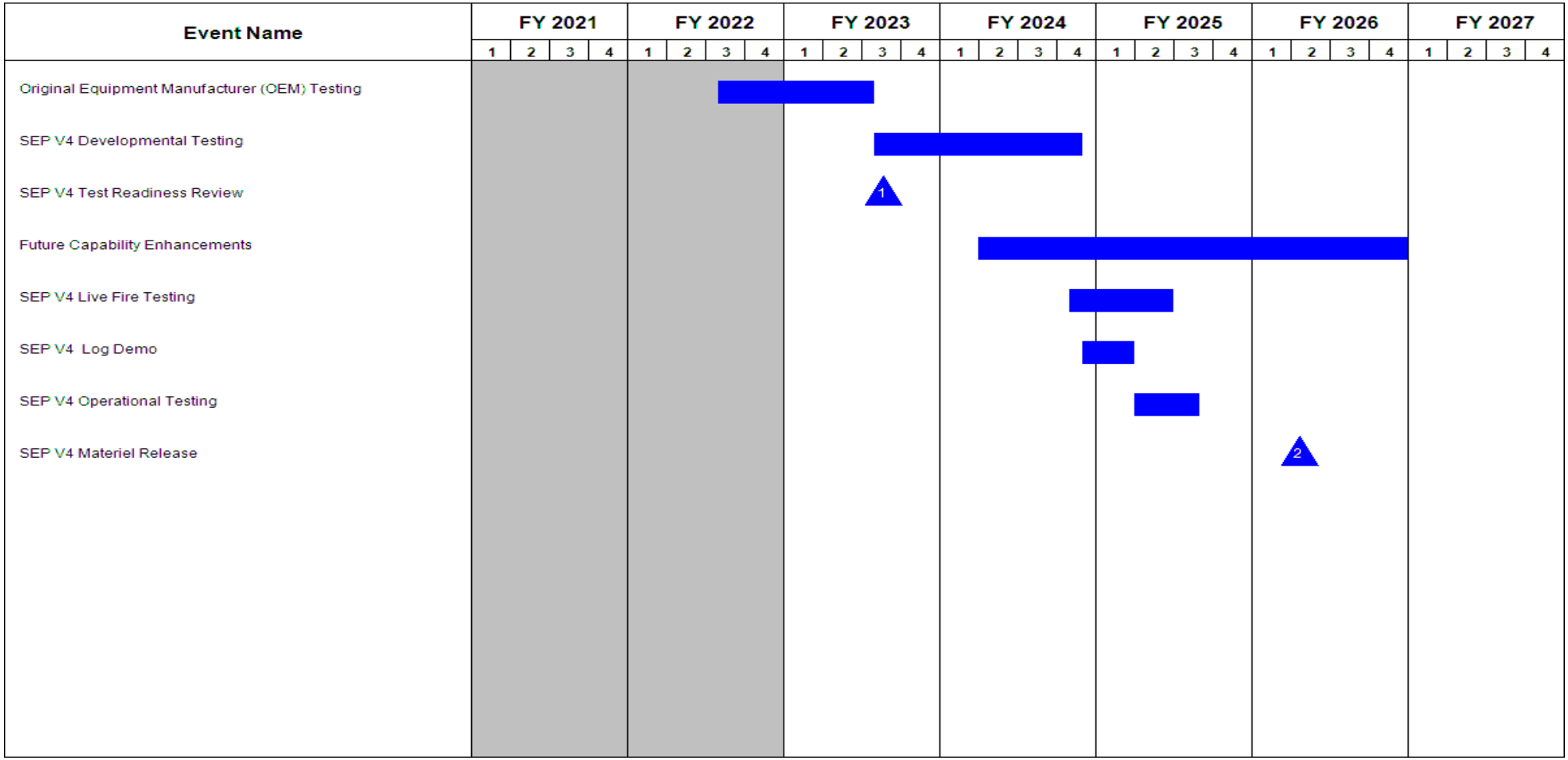
Remarks

Government Testing/SEPV4 includes prior Government testing for prior vehicles and SEPv4 testing projected to begin in FY2021.

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	916.654	61.039		120.308		61.229		-		61.229	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 330 / *Abrams Tank Improve Prog*



Note

SEP (System Enhancement Program)

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 330 / *Abrams Tank Improve Prog*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Original Equipment Manufacturer (OEM) Testing	3	2022	3	2023
SEP V4 Developmental Testing	3	2023	4	2024
SEP V4 Test Readiness Review	3	2023	3	2023
Future Capability Enhancements	2	2024	4	2026
SEP V4 Live Fire Testing	4	2024	2	2025
SEP V4 Log Demo	4	2024	1	2025
SEP V4 Operational Testing	2	2025	3	2025
SEP V4 Materiel Release	2	2026	2	2026
SEP V4 First Unit Equipped	3	2028	3	2028

Note

SEP (System Enhancement Program)

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*	Project (Number/Name) 371 / *Bradley Improve Prog*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
371: *Bradley Improve Prog*	-	8.773	19.878	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Bradley Fighting Vehicle will continue to be a major combat vehicle in the Army Operational Force for the next 20-25 years. Current modernization efforts, such as the Track and Suspension Engineering Change Proposal (ECP) and the A4 Mobility ECP, address current space, weight, and power-cooling (SWAP-C) limitations. The Bradley will continue to modernize to support additional capabilities required to counter evolving threats in multi-domain operations including, but not limited to improved vehicle diagnostics and systems to increase maintainability, mobility, survivability, sensor digitization, improved power distribution, and cyber and software improvements. These improvements increase the Bradley Fighting Vehicle's ability to survive in a cyber and electronic warfare permissive environment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Bradley Improvements ***Description:*** Provides funding for the analysis, engineering, development, and integration to support Army directed inbound technologies, address critical obsolescence concerns and other improvements to the Bradley vehicles. ***FY 2022 Plans:*** Will conduct integration activities for Army directed improvements and inbound technologies such as, but not limited to, Next Generation Automatic Test System (NGATS), power architecture, sensor digitization, and cyber security. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY2022 to FY2023 is because program funding for Bradley RDT&E is not currently authorized after PB22.	4.697	16.046	-
Title: Test & Evaluation ***Description:*** Test & Evaluation efforts support developmental and operational test events. These events include test planning, system and subsystem testing, and development of test documentation. ***FY 2022 Plans:*** Provides funding to conduct cyber testing, software development and refurbish/overhaul prototype vehicles due to very high mileage and wear, will refurbish prototype Engineering & Manufacturing Development (EMD) A4 vehicles used during developmental testing (DT). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY2022 to FY2023 is because program funding for Bradley RDT&E is not currently authorized after PB22.	1.227	1.000	-
Title: Bradley A4 ECP Program	1.477	1.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 371 / *Bradley Improve Prog*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Current projections indicate the Bradley Fighting Vehicle and the Bradley Fire Support Vehicle will remain in the Armored Brigade Combat Team (ABCT) formation until the 2050s. Given this, additional Research and Development (R&D) is required to keep the force relevant. The Bradley Fighting Vehicle System (BFVS) improvements implemented through the ECP Program will focus on restoring lost platform capability and provide capacity to support Army inbound technologies and to facilitate integration of technologies currently in development under other existing programs of record. ***FY 2022 Plans:*** Provides funding to support National Maintenance Work Request (NMWR) pilot program to finalize draft NMWR currently in development. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY2022 to FY2023 is because program funding for Bradley RDT&E is not currently authorized after PB22.			
Title: Program Management Office (PMO) Support ***Description:*** PMO Support includes systems engineering, government and contractor salaries, travel, training and other support costs required to effectively manage the program. ***FY 2022 Plans:*** Will continue government program management and system engineering support costs. These funds will cover the costs of government and direct support contractor salaries, travel, training, supplies, equipment and facilities to manage the issues resulting from Bradley A4 ECP testing and developing logistics products and other development activities. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY2022 to FY2023 is because program funding for Bradley RDT&E is not currently authorized after PB22.	1.372	1.106	-
Title: FY2022 SBIR/STTR Transfer ***Description:*** FY2022 SBIR/STTR Transfer ***FY 2022 Plans:*** FY2022 SBIR/STTR adjustment ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2022 SBIR/STTR Transfer	-	0.726	-
Accomplishments/Planned Programs Subtotals	8.773	19.878	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 371 / *Bradley Improve Prog*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• GZ2400: *Bradley Program (MOD)*	277.259	460.385	279.531	-	279.531	56.037	30.989	30.951	30.946	Continuing	Continuing

Remarks

D. Acquisition Strategy

Product Manager Bradley will execute modification work orders following completion of development to support integrating FY 2022 funded capabilities into the formation at an average rate of three ABCTs per year. Software capability upgrades, including cyber, will be included in the next iteration of Voice, Video and Integrated Data (VVID) software in FY 2022 - FY 2024 time frame.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*	Project (Number/Name) 371 / *Bradley Improve Prog*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Taxes	TBD	Assigned SBIR/ STTR Taxes : ABO	-	-		0.726	Mar 2022	-		-		-	0.000	0.726	-
		Subtotal	-	-		0.726		-		-		-	0.000	0.726	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Bradley Improvements	MIPR	TBD : TBD	76.767	2.766	Sep 2021	16.046	Sep 2022	-		-		-	Continuing	Continuing	Continuing
Bradley A4 Engineering Change Proposal (ECP) Program	MIPR	PMO : Warren, Picatinny NJ	102.401	1.477	Apr 2022	1.000	Dec 2022	-		-		-	0.000	104.878	-
Bradley Improvements - IBAS	SS/TBD	DRS : Melbourne, FL	-	0.622	Mar 2021	-		-		-		-	Continuing	Continuing	Continuing
Bradley Imrovements - Power Architecture	SS/TBD	BAE : Sterling Heights, MI	-	1.309	Jul 2021	-		-		-		-	Continuing	Continuing	Continuing
Non Recurring Engineering- Bradley A4 ECP	SS/CPIF	BAE : Sterling Heights, MI	276.530	-		-		-		-		-	0.000	276.530	-
Non Recurring Engineering- Bradley A4 ECP TADDS	TBD	TBD : TBD	7.484	-		-		-		-		-	0.000	7.484	-
Survability Enhancements - Underbelly Armor	SS/ Various	TBD : TBD	2.736	-		-		-		-		-	0.000	2.736	-
Current Fleet Enhancements	SS/ Various	TBD : TBD	2.580	-		-		-		-		-	0.000	2.580	Continuing
		Subtotal	468.498	6.174		17.046		-		-		-	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 371 / *Bradley Improve Prog*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO/PEO Support/OGA	MIPR	PMO/PEO : Bradley ECP Program	37.785	0.527	Sep 2021	0.593	Dec 2022	-		-		-	Continuing	Continuing	Continuing
Government Engineering Support	MIPR	Various : Bradley ECP Program	52.189	0.845	Dec 2020	0.513	Dec 2022	-		-		-	Continuing	Continuing	Continuing
FY 2019 Rescission	TBD	FY 2019 Pending Recission : TACOM	25.000	-		-		-		-		-	0.000	25.000	-
FY 2018 NDAA SEC 825 MDAP Cost Overrun	TBD	FY 2018 NDAA SEC 825 MDAP Cost Overrun : TACOM	0.056	-		-		-		-		-	0.000	0.056	-
		Subtotal	115.030	1.372		1.106		-		-		-	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Testing	MIPR	Various : Test Sites	56.793	1.227	Jul 2021	1.000	Jul 2022	-		-		-	Continuing	Continuing	Continuing
		Subtotal	56.793	1.227		1.000		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	640.321	8.773		19.878		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 371 / *Bradley Improve Prog*

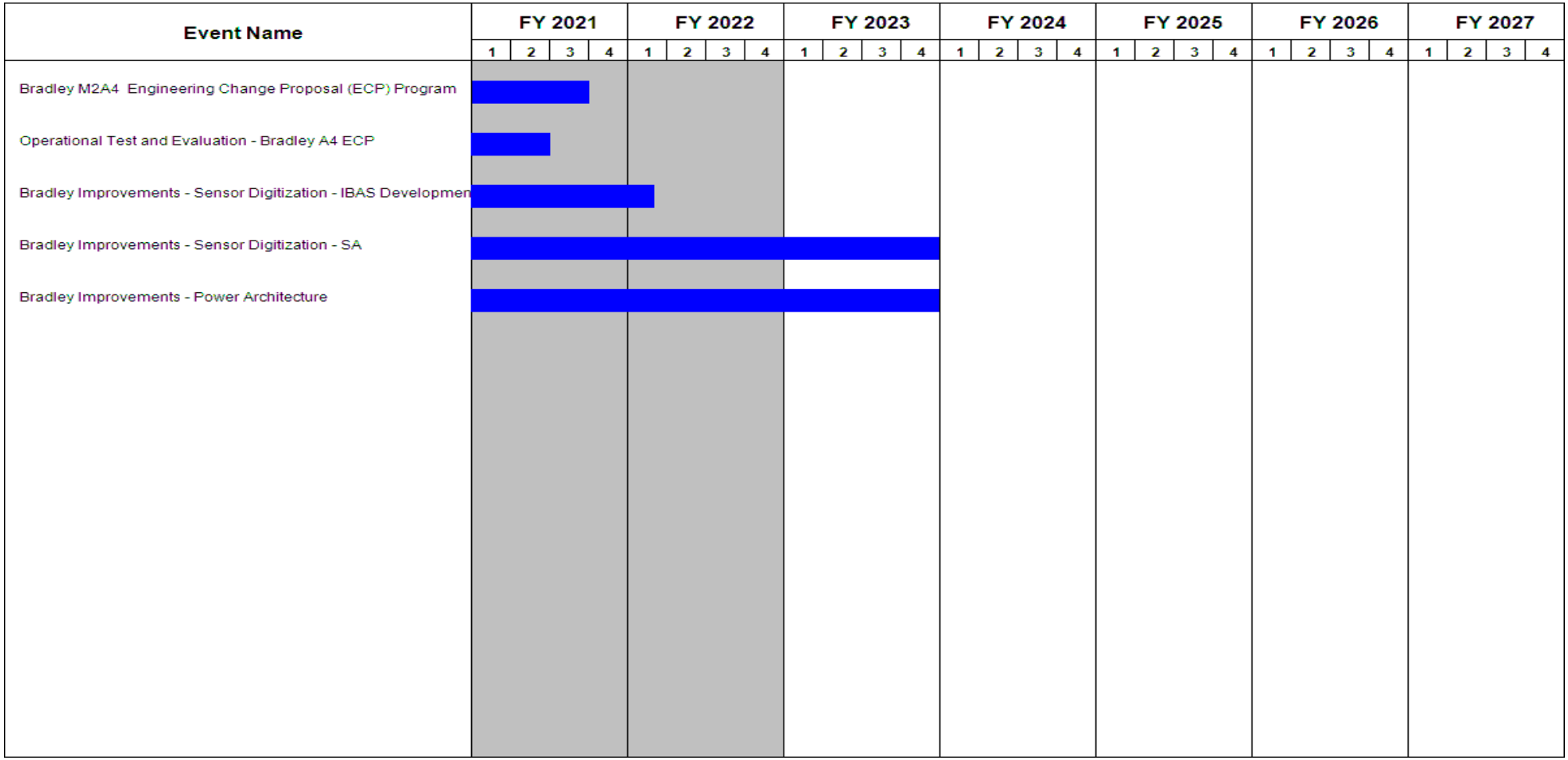


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** 371 / *Bradley Improve Prog*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Bradley M2A4 Engineering Change Proposal (ECP) Program	1	2012	3	2021
Operational Test and Evaluation - Bradley A4 ECP	4	2020	2	2021
Bradley Improvements - Sensor Digitization - IBAS Development	4	2019	1	2022
Bradley Improvements - Sensor Digitization - SA	2	2020	4	2023
Bradley Improvements - Power Architecture	4	2019	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203735A / *Combat Vehicle Improvement Programs*	Project (Number/Name) EE2 / *Stryker Improvement*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
EE2: *Stryker Improvement*	-	22.103	30.967	71.146	-	71.146	14.100	14.378	14.379	14.519	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Stryker Improvement will address the development of Lethality, Survivability, Mobility, Network Lethality, and Communication, Command and Control (C3) improvements within the Stryker Family of Vehicles (FOVs). Principal development efforts include upgrades associated with the Stryker Double V-Hull A1 (DVH A1) Engineering Change Proposal (ECP), Stryker 30mm Infantry Carrier Vehicle Dragoon (ICVD) Operational Needs Statement (ONS), Common Remotely Operated Weapon Station-Javelin (CROWS-J) ONS, Stryker Survivability Enhancement, and Stryker Lethality ECPs. DVH A1 ECP upgrades restore Stryker DVH Space, Weight, and Power-Cooling (SWaP-C) lost as a result of incorporating vehicle changes to counter threats encountered during deployment operations while allowing the future network to be hosted without further degradation in vehicle protection and mobility. The Stryker 30mm ICVD and CROWS-J ONS efforts addressed Urgent Operational Need to increase the lethality of Stryker Infantry Carrier Vehicles (ICV) within the United States Army European Command (USAREUR). The 30mm ICVD ONS effort integrates a 30mm-equipped weapon station providing, USAREUR with precision direct firepower to overwhelm the enemy in encounter actions and suppressive fire to preserve mounted and dismounted freedom of movement. The Stryker Survivability Enhancements address evolving threats by assessing survivability improvements, to include but not limited to, 360 Situational Awareness, reactive armor tiles, and integration of emerging and existing technologies and other Stryker based platform solutions. The Stryker platform will also include future Mission Equipment Package (MEP) integration that includes but not limited to the Fire Direction Center (FDC) providing an on-the move capability that processes voice and digital data while maintaining contact with the indirect fire team over extended distances. Stryker Lethality ECP efforts (ICVVA1-30mm, CROWS-J, Anti-Tank Guided Missile (ATGM), and other capabilities) focus on the integration of a suite of complementary MEP lethality upgrades that will improve the suppressive fire and armored vehicle engagement capabilities across the Army's Stryker Brigade Combat Teams (SBCTs). Additionally, the Lethality MEP upgrades will address existing obsolescence issues of the Remote Weapon Station (RWS) with the CROWS and CROWS-J upgrade. The ATGM ECP will upgrade the Modified Improved Target Acquisitions System (MITAS), incorporating a far target locator and enabling the dissemination of target acquirement information utilizing networked lethality, providing a common operating picture. Stryker Network Modernization will formalize the system integration of the Integrated Tactical Network (ITN), Integrated Visual Augmentation System (IVAS), and Tactical Cloud Package (TCP) as part of Mounted Capability Set 23 (MCS23) for the Stryker platform. Upgrades of the Stryker flat-bottom hull and DVH variants were completed to mitigate known system deficiencies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Stryker DVH A1 ECP Development (Engineering/Prototypes)	-	1.836	-
Description: The Stryker DVH A1 ECP is a fleet-wide initiative that mitigates mobility degradation caused by survivability improvements. Addresses vehicle space, weight, power, cooling and computing challenges. Returns the performance of the DVH nearly back to the original design capacity and provides approximately 20% growth potential in gross vehicle weight and power generation capacity posturing these vehicles for efficient upgrades in the future.			
FY 2022 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203735A / *Combat Vehicle Improvement Programs*	**Project (Number/Name)** EE2 / *Stryker Improvement*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Complete DVH A1 ECP verification and logistics products. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Completion of DVH A1 ECP development, including the completion of DVH A1 ECP verification and logistics products.			
Title: Stryker DVH A1 ECP Testing ***Description:*** Government and Contractor Support for developmental, operational and live fire testing in support of DVH A1 ECP.	0.092	-	-
Title: Stryker Lethality ECPs Development (Engineering/Protoypes) ***Description:*** Lethality ECPs encompass the integration of a 30 millimeter (mm) (ICVVA1-30mm), under armor Javelin fire capability (Common Remotely Operated Weapon Station-Javelin (CROWS-J)), improved optics and targeting systems, Inertial Navigation Unit (INU) sensor, and other capabilities into the Stryker fleet. These improvements will provide for increased under armor fire capability, target identification range, provide over-match against peer threats and supporting infantry assault, and address obsolescence within the targeting and reconnaissance systems utilized on the Stryker FoV. ***FY 2022 Plans:*** Continuing Stryker Lethality ECPs development to include completion of CROWS-J ECP and ATGM ECP logistic products. ***FY 2023 Plans:*** Continuing Stryker Lethality ECPs development to integrate the Inertial Navigation Unit (INU) sensor and Global Positioning System (GPS) information with CROWS-J to communicate with the Joint Battle Command - Platform (JBC-P). Complete ATGM ECP logistic products. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease based on the completion of ATGM ECP logistics products and completing development engineering of the Inertial Navigation Unit sensor integration efforts.	6.097	2.573	1.200
Title: Stryker Lethality ECPs Testing ***Description:*** Government and Contractor Support for developmental, operational and live fire testing in support of Lethality ECPs, including Inertial Navigation Unit (INU) sensor testing. ***FY 2023 Plans:*** Initiate development of test plans and procedures for the Inertial Navigation Unit (INU) sensor testing. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	2.690	-	1.461

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Increase based on start of test planning for the Inertial Navigation Unit (INU) sensor.			
Title: Government Systems Engineering and Project Management ***Description:*** Government Systems Engineering and Program Management includes salaries, travel and other support costs required to effectively manage all Research, Development, Test, & Evaluation (RDT&E) efforts. ***FY 2022 Plans:*** Continuing Government Systems Engineering and Program Management support (labor, travel, training, supplies, and equipment) for Stryker DVH A1 ECP, Survivability Enhancement, Lethality ECPs (CROWS-J, ATGM, and 30mm Medium Caliber Weapon System) and Fire Direction Center development efforts. ***FY 2023 Plans:*** Government Systems Engineering and Program Management support (labor, travel, training, supplies, and equipment) for Research, Development, Test, & Evaluation (RDT&E) efforts, including Survivability Enhancement, Non Primary Power Systems, Fire Direction Center development, and Stryker Network Modernization Development. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase of Government Systems Engineering and Program Management support (labor, travel, training, supplies and equipment) based on annual inflation adjustment.	5.385	5.495	5.605
Title: Stryker Power System ***Description:*** Development and testing of a non-primary power solution for the Stryker platform. The non-primary power enhancement incorporates multiple components and capabilities, including the battery box container, Auxiliary Power Unit (APU) and interface kits. ***FY 2022 Plans:*** Continuation of testing and logistics products development for the non-primary solution. ***FY 2023 Plans:*** Continuing of the integration design effort, testing and logistics product development for the non-primary solution. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase based on continued development, testing and logistics product development for non-primary system.	4.168	4.250	5.750
Title: Stryker Platform Mission Equipment Packages Integration ***Description:*** Development engineering of MEP onto the Stryker platforms. Integration of the Fire Direction Center MEP onto the DVH A1 platform.	-	2.291	8.161

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: Initiate developmental acquisition and MEP scope for the Fire Direction Center MEP onto a DVH A1 platform. ***FY 2023 Plans:*** Continue integration engineering and procurement of prototype hardware for the Fire Direction Center MEP onto the DVHA1. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase based on continuing integration engineering and prototype hardware buy for the Fire Direction Center MEP.			
Title: Stryker Survivability Enhancements ***Description:*** The Stryker Survivability Enhancements will develop strategies, through technical and engineering analyses, for the integration of emerging technologies onto the Stryker Platforms. The Stryker Survivability Enhancements will include, but are not limited to, the fleet wide 360 degree Situational Awareness, hardware convergence, and sensor suite collaboration. ***FY 2022 Plans:*** Continuation of 360 degree Situational Awareness through DVE Wide enhancements and IVAS efforts. Begin development of other emerging technologies onto the DVH A1 platform. ***FY 2023 Plans:*** Continuation of the 360 degree Situational Awareness effort with prototyping and testing, along with other emerging technologies. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease due to ramping down of the current phase of the 360 degree Situational Awareness effort.	3.671	13.392	1.990
Title: Stryker Network Modernization Development (Engineering / Prototypes) ***Description:*** Stryker Network Modernization will formally integrate the Integrated Tactical Network (ITN), Integrated Visual Augmentation System (IVAS) vehicle support kit, and Tactical Cloud Package (TCP) as part of Mounted Capability Set 23 (MCS23) at the System of Systems level. Effort will prioritize the DVHA1 Platform and include DVHA0. With the Army's Network Vision 2028, and Army 2030 planning, the Network CFT has coordinated closely with PEO C3T, PEO GCS, PEO Soldier, and PEO IEW&S to deliver a suite of capabilities as part of M-CS23 for DVHA1 and DVHA0. These capabilities are required in SBCT formations to provide Soldiers with a resilient and assured data transport network to the tactical edge, provide a robust and real-time common tactical operating picture among friendly forces and ensure overmatch with near-peer adversaries. ***FY 2023 Plans:***	-	-	42.421

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Begin to develop formalized system integration of M-CS23, develop and validate operator and maintainer manual updates, and deliver production-level installation kit technical data package (TDP) that can be used for a competitive production and retrofit installation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase based on the start of developing a formalized system integration of M-CS23 including development and validation of operator and maintainer manual updates and technical data package.			
Title: Stryker Network Modernization Testing ***Description:*** Government and Contractor support for developmental and operational testing of the Integrated Tactical Network (ITN), Integrated Visual Augmentation System (IVAS) vehicle support kit, and Tactical Cloud Package (TCP). ***FY 2023 Plans:*** Government and Contractor support for executing system level testing to achieve all safety and interoperability certifications to field the installation kits and provision components for the supply system. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase based on start of Network Modernization test activities.	-	-	4.558
Title: SIBR STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC 638. ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC 638. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638.	-	1.130	-
Accomplishments/Planned Programs Subtotals	22.103	30.967	71.146

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• GM0100: *Stryker (Mod)*	-	-	0.000	-	0.000	64.099	99.127	99.056	99.066	Continuing	Continuing
• G85200: *Stryker Upgrade*	1,164.152	1,082.828	671.271	-	671.271	827.512	871.670	880.705	873.457	Continuing	Continuing

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost

Remarks

23 March 2018 Army Requirements Oversight Council (AROC) decision to exchange all remaining flat-bottom brigades results in continuing exchange production beginning in FY 2018 funded in Stryker Upgrade (G85200). Stryker MOD (GM0100) supports Stryker Fleet modifications and Lethality ECP retrofits in FY 2019-2020.

Beginning in FY 2021 the requirements and funding in the Stryker MOD (GM0100) was moved to Stryker Upgrade (G85200).

In FY 2022, funding in the amount of $0.183 million for manpower was realigned to Operations and Maintenance. Program support costs have been accurately updated to reflect the realignments.

D. Acquisition Strategy

The Stryker ECP 1 effort will buy back the vehicle space, weight, and power margin lost due to the addition of numerous kits in response to eleven years of war (20-combat rotations & 37+ million total miles), in order to allow integration of the future network (as directed by VCSA in August 2011) without further degrading the performance of the platform. In May 2012, Stryker ECP 1 program (Phase I) was approved, permitting preliminary design and integration efforts on both the Flat Bottom (FB) and DVH variants. In March 2013, Phase II was approved continuing design and integration of ECP 1 mechanical power, electrical power generation, chassis upgrades, and the in-vehicle network upgrades. Based on additional testing conducted in the summer of 2013, the decision was made to focus ECP 1 efforts on the DVH platform and defer efforts on flat-bottom Stryker vehicles. The effort has subsequently been renamed the Stryker DVH A1 ECP. The DVH A1 ECP Phase II contract, awarded November 25, 2013, continued development engineering, prototype build test and evaluation. The initial DVH A1 ECP production contract was awarded in October 2016 (Sole-Source Firm Fixed Price arrangement). A second and third buy of DVH A1 ECP vehicles was awarded as a Fixed Price Incentive Fee arrangement. A March 2018 AROC decision was made to pure fleet the Stryker brigades to DVH with the initial approval for 6 DVH A1 brigades. The objective acquisition strategy is to annually procure 1/2 of a brigade.

On July 2, 2015, Army Systems Acquisitions and Review Council (ASARC) authorization was granted to execute the Stryker 30mm ICVD ONS effort. 30mm ICVD Engineering, Manufacturing, and Development (EMD) contracts for Non-Recurring Engineering (NRE) and Logistics Products Development/Test Support were awarded in January 2016 and May 2016, respectively (Cost Plus Incentive-Fee basis). The 30mm ICVD ONS Production/Retrofit contract was awarded in May 2016 through an Undefinitized Contract Action (UCA). Definitization of the Fixed Price Incentive Fee (FPIF) Production contract occurred in March 2017.

The Stryker Lethality ECP efforts will focus on the integration of a suite of complementary Mission Equipment Package MEP lethality upgrades, which include the ICVVA1-30mm (formerly known as 30mm Medium Caliber Weapon System), CROWS-J, ATGM target acquisition optics, integration of emerging and existing technologies such as the Fire Direction Center requirement, Integrated Visual Augmentation System (IVAS), and other Stryker-based platform solutions, as well as additional capabilities that will improve the suppressive fire and armored vehicle engagement capabilities across the Army's SBCTs. Army Acquisition Executive (AAE) approval to initiate the Stryker CROWS-J and ATGM ECP efforts was received in a September 30, 2016 Acquisition Decision Memorandum (ADM). A ICVVA1-30mm decision was made in March 2019. The ICVVA1-30mm effort awarded design studies to multiple vendors and evaluated the bid samples, and awarded a production

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ready solution meeting requirements at the best value to the Army. To improve platform survivability fleet wide, 360 Situational Awareness is being developed by integrating existing technologies, for fleet wide installation over a period of six years to allow the occupants during both open and closed hatch operations to visualize their immediate surrounding while stationary and on the move in adverse weather conditions.

In 2016, the Army approved the FDC requirement and the Field Artillery Battalion TAC using excess Flat Bottom Hull (FBH) Stryker during Force Design Update (FDU) process. Following the March 2018 Pure fleet AROC decision, Force Design Division (FDD) identified the Double V Hull A1 (DVH A1) as the platform for the FDC.

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Stryker 30mm ICVD ONS LethalityProject Management	MIPR	PEO GCS/TACOM : Sterling Heights, MI	9.602	-		-		-		-		-	0.000	9.602	-
Survivability Enhancement Government Engineering and Project Management	MIPR	PEO GCS/TACOM : Various	0.534	-		-		-		-		-	0.000	0.534	-
Project Management Office (PMO)	MIPR	PEO GCS/TACOM : Various	67.810	5.385	Jan 2021	5.495	Jan 2022	5.605	Jan 2023	-		5.605	23.959	108.254	-
FY2018 NDAA SEC 825 MDAP Cost Overrun	Allot	ASAALT : Huntsville, Alabama	0.029	-		-		-		-		-	0.000	0.029	-
SIBR STTR Transfer	Various	various : various	-	-		1.130		-		-		-	0.000	1.130	-
		Subtotal	77.975	5.385		6.625		5.605		-		5.605	23.959	119.549	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Stryker DVH A1 ECP Development	SS/CPIF	GDLS, MI : Various	174.652	-		1.836	Jan 2022	-		-		-	0.000	176.488	-
Stryker DVH A1 ECP Training Device Updates	MIPR	PEO STRI, FL : Various	0.020	-		-		-		-		-	0.000	0.020	-
Stryker 30mm ICVD ONS Development	SS/CPIF	GDLS, MI : Various	75.412	-		-		-		-		-	0.000	75.412	-
Stryker Lethality ECPs Development	C/Various	PM CSW; PM CCWS : Various	51.049	6.097	Jan 2021	2.573	Jan 2022	1.200	Jan 2023	-		1.200	1.305	62.224	-
Stryker Lethality ECPs Training Device Updates	MIPR	PEO STRI, FL : Various	0.808	-		-		-		-		-	0.000	0.808	-
Stryker Survivability Enhancement	Various	US Army TARDEC, Various : Sterling Heights, MI	3.044	0.100	Jan 2021	12.086	Jan 2022	0.780	Jan 2023	-		0.780	1.419	17.429	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Stryker Power System Development	MIPR	US Army TARDEC, Various : US Army TARDEC	7.384	1.289	Jan 2021	2.375	Feb 2022	2.750	Feb 2023	-		2.750	0.000	13.798	-
Stryker Wireless Intercom Development	C/CPFF	Ricardo Defense : Washington DC	4.934	-		-		-		-		-	0.000	4.934	-
Stryker Fire Direction Center Variant Development	TBD	TBD : TBD	-	-		2.291	Jun 2022	8.089	Jun 2023	-		8.089	3.394	13.774	-
Stryker Network Modernization Development	TBD	TBD : TBD	-	-		-		42.421	Jan 2023	-		42.421	0.000	42.421	-
		Subtotal	317.303	7.486		21.161		55.240		-		55.240	6.118	407.308	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Stryker DVH A1 ECP Testing	MIPR	Army Test Centers : Various	43.547	0.092	Jan 2021	-		-		-		-	0.000	43.639	-
Stryker DVH A1 ECP Contractor Support to Test	SS/CPFF	GDLS, MI : Various	40.194	-		-		-		-		-	0.000	40.194	-
Stryker 30mm ICVD ONS Test	MIPR	Army Test Centers : Various	20.335	-		-		-		-		-	0.000	20.335	-
Stryker 30mm ICVD ONS Contractor Support to Test	SS/CPFF	GDLS, MI : Various	25.631	-		-		-		-		-	0.000	25.631	-
Stryker Lethality ECPs Testing	MIPR	Army Test Centers : Various	29.066	2.690	Dec 2020	-		1.461	May 2023	-		1.461	0.000	33.217	-
Stryker Lethality ECPs Contractor Support to Test	MIPR	Various : Various	11.005	-		-		-		-		-	0.000	11.005	-
Stryker Survivability Enhancement	MIPR	Army Test Centers : Various	0.212	3.571	Dec 2020	1.306	Dec 2021	1.210	Dec 2022	-		1.210	0.495	6.794	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Stryker Power System Testing	MIPR	Army Test Centers : Various	2.979	2.879	Dec 2020	1.875	Dec 2021	3.000	Dec 2022	-		3.000	0.000	10.733	-
Stryker Wireless Intercom Testing	MIPR	Army Test Centers : Various	0.005	-		-		-		-		-	0.000	0.005	-
Stryker Fire Direction Center Variant Testing	TBD	TBD : TBD	-	-		-		0.073	Jul 2023	-		0.073	11.055	11.128	-
Stryker Network Modernization Testing	TBD	TBD : TBD	-	-		-		4.465	Apr 2023	-		4.465	0.000	4.465	-
Stryker Network Modernization Contractor Support to Test	TBD	TBD : TBD	-	-		-		0.092	Apr 2023	-		0.092	0.000	0.092	-
		Subtotal	172.974	9.232		3.181		10.301		-		10.301	11.550	207.238	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	568.252	22.103		30.967		71.146		-		71.146	41.627	734.095	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
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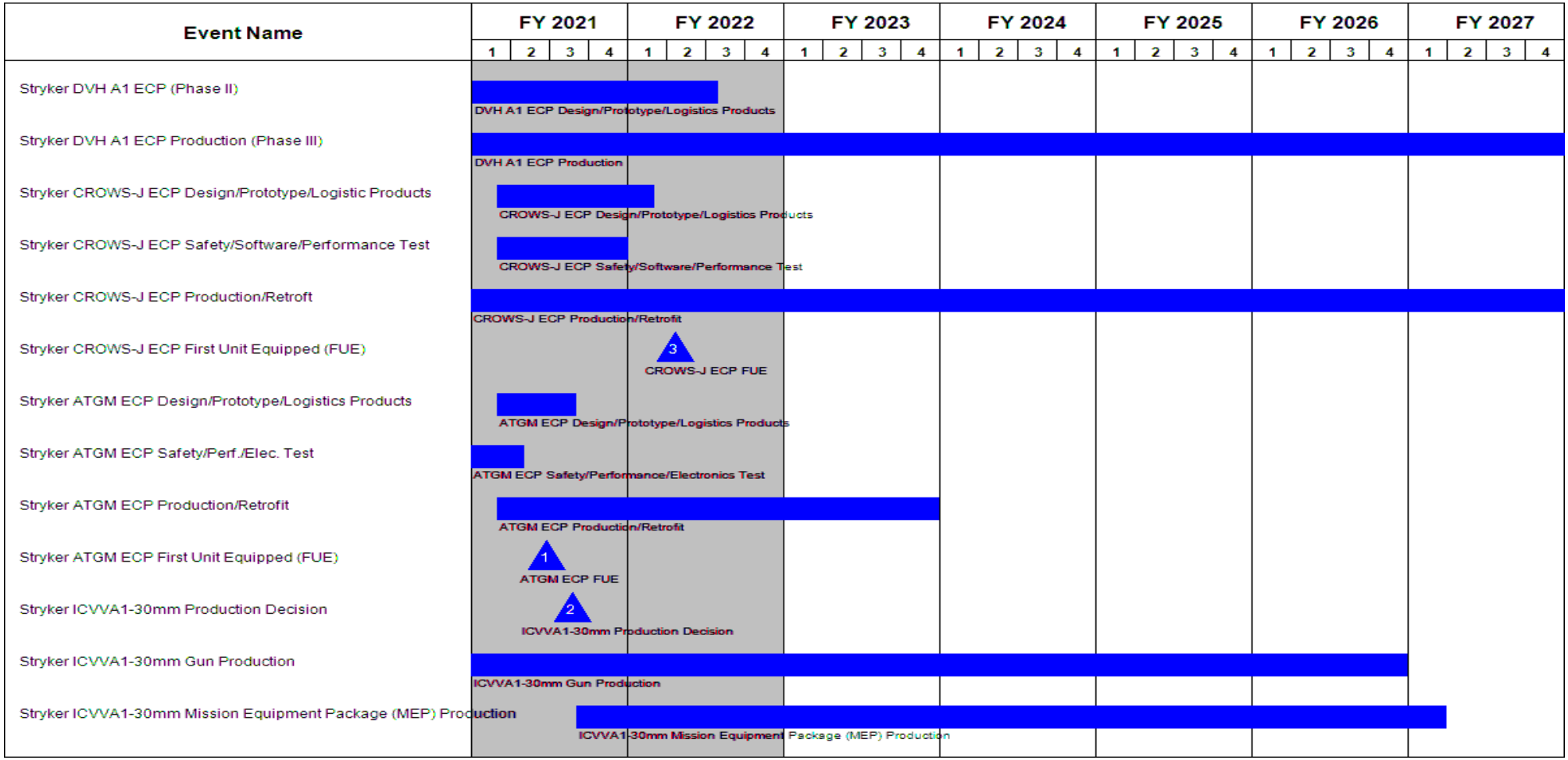

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
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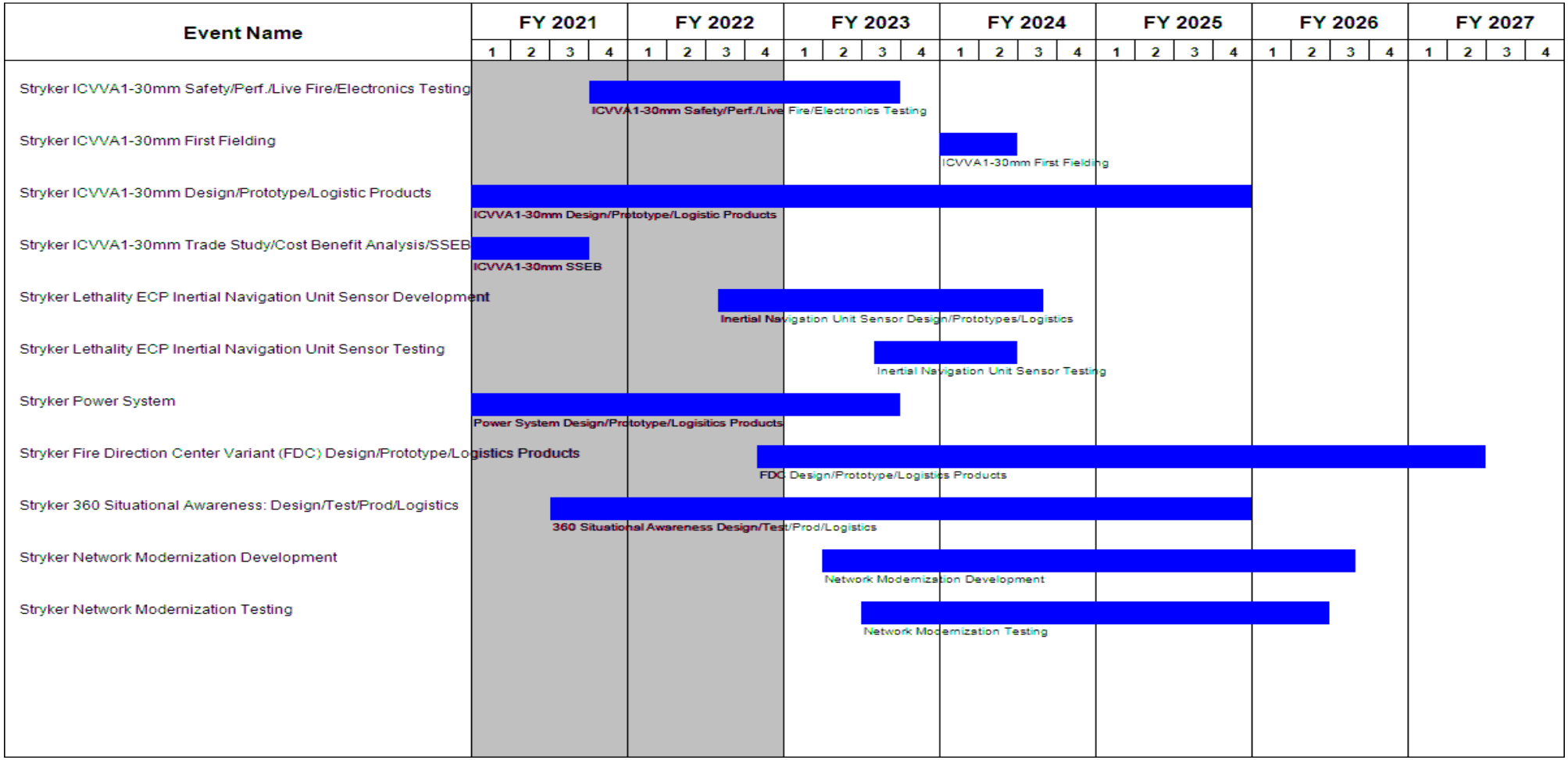

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Stryker DVH A1 ECP (Phase II)	1	2014	3	2022
Stryker DVH A1 ECP Production (Phase III)	1	2017	4	2030
Stryker CROWS-J ECP Design/Prototype/Logistic Products	1	2019	1	2022
Stryker CROWS-J ECP Safety/Software/Performance Test	1	2019	4	2021
Stryker CROWS-J ECP Production/Retroft	3	2019	4	2029
Stryker CROWS-J ECP First Unit Equipped (FUE)	2	2022	2	2022
Stryker ATGM ECP Design/Prototype/Logistics Products	1	2018	3	2021
Stryker ATGM ECP Safety/Perf./Elec. Test	4	2019	2	2021
Stryker ATGM ECP Production/Retrofit	1	2020	4	2023
Stryker ATGM ECP First Unit Equipped (FUE)	2	2021	2	2021
Stryker ICVVA1-30mm Production Decision	3	2021	3	2021
Stryker ICVVA1-30mm Gun Production	4	2020	4	2026
Stryker ICVVA1-30mm Mission Equipment Package (MEP) Production	3	2021	1	2027
Stryker ICVVA1-30mm Safety/Perf./Live Fire/Electronics Testing	4	2021	3	2023
Stryker ICVVA1-30mm First Fielding	1	2024	2	2024
Stryker ICVVA1-30mm Design/Prototype/Logistic Products	2	2019	4	2025
Stryker ICVVA1-30mm Trade Study/Cost Benefit Analysis/SSEB	4	2020	3	2021
Stryker Lethality ECP Inertial Navigation Unit Sensor Development	3	2022	3	2024
Stryker Lethality ECP Inertial Navigation Unit Sensor Testing	3	2023	2	2024
Stryker Power System	2	2019	3	2023
Stryker Fire Direction Center Variant (FDC) Design/Prototype/Logistics Products	4	2022	2	2027
Stryker 360 Situational Awareness: Design/Test/Prod/Logistics	3	2021	4	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Stryker Network Modernization Development	2	2023	3	2026
Stryker Network Modernization Testing	3	2023	2	2026

Note

Schedule includes the major Stryker RDTE and Procurement (WTCV) funded activities.