

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>
--	--

COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	273.433	123.992	137.256	-	137.256	-	-	-	-	-	-
EV8: <i>Mobile Protected Firepower</i>	-	273.433	123.992	137.256	-	137.256	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Infantry Brigade Combat Teams (IBCTs) lack the mobile, protected firepower capability necessary to defeat enemy prepared positions, destroy enemy armored vehicles, close with the enemy through fire and maneuver, and ensure freedom of maneuver and action in close contact with the enemy. Mobile Protected Firepower (MPF) will provide the protected, long range, precision direct-fire capability to ensure freedom of movement during offensive operations and defeat attacking enemy during defensive operations. This program supports the Next Generation Combat Vehicle (NGCV) Cross Functional Team (CFT).

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	285.136	135.488	123.143	-	123.143
Current President's Budget	273.433	123.992	137.256	-	137.256
Total Adjustments	-11.703	-11.496	14.113	-	14.113
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-6.550			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-11.703	-4.946			
• Adjustments to Budget Years	-	-	14.113	-	14.113

Change Summary Explanation

FY 2022 RDT&E funding was increased by \$14.113 million due to the realignment of Low Rate Initial Production (LRIP) phase logistics products development activities from WTCV (SSN G80820 - Mobile Protected Firepower) to RDT&E.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower
--	---	--

COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
EV8: Mobile Protected Firepower	-	273.433	123.992	137.256	-	137.256	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Infantry Brigade Combat Teams (IBCTs) lack the mobile, protected firepower capability necessary to defeat enemy prepared positions, destroy enemy armored vehicles, close with the enemy through fire and maneuver, and ensure freedom of maneuver and action in close contact with the enemy. Mobile Protected Firepower (MPF) will provide the protected, long range, precision direct-fire capability to ensure freedom of movement during offensive operations and defeat attacking enemy during defensive operations. This program supports the Next Generation Combat Vehicle (NGCV) Cross Functional Team (CFT).

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

	FY 2020	FY 2021	FY 2022
<p>Title: Product Development</p> <p>Description: MPF Middle Tier Acquisition (MTA) Rapid Prototyping, to include integration engineering, prototype builds, technical support to government test, and logistics products development efforts contracted to BAE Systems and General Dynamics Land Systems (GDLS).</p> <p>FY 2021 Plans: Continuation of MTA Rapid Prototyping efforts, to include Technical Manual (TM) and Training Support Package (TSP) development, spare parts provisioning, Repair Parts and Special Tools List (RPSTL) creation, and development of plans to enable execution of the FY 2022 MPF Supportability Assessment. FY 2021 product development actions will also include manufacturing readiness maturation efforts, engineering and logistics support to integrate emerging, mature technologies to meet system requirements, and test failure root cause analysis, corrective action application, user training, and test asset maintenance for Pre-Production Testing (PPT), the Soldier Vehicle Assessment (SVA), and Limited User Testing (LUT).</p> <p>FY 2022 Plans: Completion of MTA Rapid Prototyping efforts, to include TM and TSP validation and updates, spare parts provisioning, RPSTL updates, and execution of the MPF Supportability Assessment. FY 2022 product development actions will also include vehicle design updates and logistics product revisions to address failures that emerge from PPT.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Decrease from FY 2021 to FY 2022 is due to reduced levels of engineering and logistics support required to support USG developmental and operational testing.</p>	249.276	83.804	27.718
<p>Title: Product Development - LRIP Phase</p>	-	-	29.930

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>	Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>Description: MPF Low Rate Initial Production (LRIP) phase efforts, to include logistics product development, TM and TSP updates, LRIP test planning, purchase of the System Support Package (SSP) for LRIP phase testing, and contractor technical support to test.</p> <p>FY 2022 Plans: FY 2022 activities include the continued development of logistics products such as the Operator, Field Maintenance, and Battle Damage and Repair (BDAR) Manuals, continued supportability analysis such as Level of Repair Analysis (LORA), Reliability and Maintainability (R&M) Analysis, development of National/Depot Maintenance Work Requirements (NMWR/DMWR), and continued development of products to support operator, field level maintenance, and instructor training. FY 2022 will also fund LRIP test planning, long lead spare parts procurement to enable start of product quality testing (PQT) in FY 2024, and concept development to inform the integration of future ammunition.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: LRIP phase efforts initiate at FY 2022 Milestone C.</p>				
<p>Title: Prototype Upgrade to LRIP Configuration</p> <p>Description: After a successful Milestone C, eight (8) vehicles will be retrofitted to LRIP configuration to support LRIP phase survivability testing, logistics products development, and implementation of corrective design changes driven by failures that arise during Production Qualification Testing (PQT) and Initial Operational Test and Evaluation (IOT&E). Upgrading MPF prototypes to LRIP configuration will result in substantial cost avoidance compared with producing additional LRIP vehicles to support test requirements.</p> <p>FY 2022 Plans: Eight (8) vehicles will be retrofitted to LRIP configuration to support performance and survivability testing.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: LRIP phase efforts initiate at FY 2022 Milestone C.</p>		-	-	15.922
<p>Title: LRIP Vehicles for Full-Up System-Level (FUSL) Live Fire</p> <p>Description: New production of MPF LRIP vehicles for use in FUSL Live fire testing.</p> <p>FY 2022 Plans: Three (3) vehicles produced in the LRIP configuration will be used in MPF destructive FUSL live fire testing.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement:</p>		-	-	35.709

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>	Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
LRIP phase efforts initiate at FY 2022 Milestone C.				
<p>Title: Government Test and Evaluation (Performance Testing)</p> <p>Description: During the Rapid Prototyping phase, the Government will execute performance testing on 16 prototypes (eight per contractor) and four BH&T assets (two per contractor). Performance testing during the Rapid Prototyping phase will include Ballistic Hull & Turret (BH&T) survivability testing and Pre-Production Testing (PPT), which consists of vehicle-level lethality, Reliability, Availability, and Maintainability (RAM), and electromagnetic compatibility and interference testing. PPT will also contain an initial cybersecurity evaluation.</p> <p>BH&T testing will provide Force Protection and vehicle-level survivability data while PPT will provide vehicle-level automotive, lethality, and RAM performance data. The results of Rapid Prototyping performance testing will inform the planned FY 2022 Milestone C decision.</p> <p>During the LRIP phase, the Government will execute performance testing on 17 vehicles (inclusive of eight (8) prototype vehicles retrofitted to LRIP configuration). Performance testing during the LRIP phase will include survivability testing and Product Quality Testing (PQT), which consists of vehicle-level lethality, RAM, and electromagnetic compatibility and interference testing, and cybersecurity testing.</p> <p>FY 2021 Plans: PPT will be continued in FY 2021, to include safety, automotive performance, fire control, lethality, RAM, electromagnetic environmental effects (E3) testing, and an initial cybersecurity assessment.</p> <p>Safety testing will assess automotive, weapon, and software safety, while automotive testing will assess system weight, center of gravity, human factors, transportability, acceleration, maximum speed, fuel consumption, and ability to traverse slopes, obstacles, and water. Fire control and lethality testing will assess accuracy, frequency response, sight performance, target handoff, and control and communications. RAM testing will evaluate system reliability, availability, and maintainability metrics while E3 testing will measure system electromagnetic compatibility, interference, and safety. The initial cybersecurity assessment will evaluate system cybersecurity and resilience.</p> <p>Government test activities necessary to perform FY 2021 PPT include the integration and installation of instrumentation, execution of test events, collection and storage of data, processing of Test Incident Reports (TIR), and Failure Analysis and Corrective Action (FACAR) resolution.</p> <p>FY 2022 Plans:</p>		8.274	13.852	6.532

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>	Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>Activities include completion of MTA Rapid Prototyping phase testing, to include PPT and draft test reports to inform the down-select Source Selection Evaluation Board (SSEB) and the Milestone C decision. Additionally, finite element analysis, failure modes effects analysis, ballistic modeling and simulation, crew casualty and prototype damage assessments, and controlled damage experiments will be completed to inform detail planning for LRIP phase performance and survivability testing.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Decrease is due to reduced performance testing requirements from FY 2021 to FY 2022.</p>				
<p>Title: Government Test and Evaluation (Operational Testing)</p> <p>Description: During the Rapid Prototyping phase, the Government will execute operational testing on eight prototypes (four per contractor) through a Limited User Test (LUT). The LUT will provide early data regarding the operational effectiveness and suitability of the MPF.</p> <p>During LRIP phase, the Government will execute a thirteen (13) vehicle Company-Level Initial Operational Test and Evaluation (IOT&E). The IOT&E is planned for FY 2024.</p> <p>FY 2021 Plans: The Government will initiate a LUT in 4th Quarter, FY 2021 to assess the MPF system's operational effectiveness and suitability. The LUT will include ten prototype systems (five per contractor) and will be conducted at Ft. Bragg, NC and Ft. Stewart, GA. Government activities necessary to complete the LUT include test planning, system instrumentation, test execution, maintenance of opposing force vehicles, and test report development.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: FY 2021 funds will complete the MPF LUT.</p>		-	9.658	-
<p>Title: Soldier Vehicle Assessment (SVA)</p> <p>Description: The SVA will place eight prototype vehicles (four per contractor) into the hands of soldiers to develop MPF Tactics, Techniques, and Procedures (TTPs), assess Doctrine, Organization, Training materiel Leadership and educational Personal Facilities and Policy (DOTmLPP-P) domains, collect data to support preparations for the LUT, and inform future MPF Product Improvements. SVA force-on-force and maneuver exercises will be conducted at Ft. Bragg, NC while SVA gunnery events will be at Ft. Stewart, GA.</p> <p>FY 2021 Plans:</p>		0.193	2.916	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>	Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>In FY 2021, the Government will complete the MPF SVA, to include contractor-led soldier training on the MPF, force-on-force training missions, Platoon and Section Gunnery events, and maneuver Live Fire exercises to assess MPF TTPs and DOTmLPPF-P domains.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Decrease from FY 2021 to FY 2022 is due to completion of the SVA in FY 2021.</p>				
<p>Title: Training Aids and Devices Development</p> <p>Description: Development of aids and devices to facilitate institutional training for MPF operators and maintainers. MPF training aids and devices will include Hands on Trainers (HOT), Diagnostic/Troubleshooting Trainers (DTT), Part Task Trainers (PTT), an Advanced Gunnery Training System (AGTS), and an MPF Combat Vehicle Tactical Engagement Simulation System (CVTESS). MPF aids and devices will be interoperable/compatible with the Army's current live Tactical Engagement Simulation (TES) systems; instrumentation systems; Common Training Instrumentation Architecture (CTIA); Live, Virtual Constructive-Integrated Architecture (LVC-IA) training enablers; and the future Synthetic Training Environment (STE).</p> <p>FY 2021 Plans: FY 2021 efforts include continued development of contract performance specifications for gunnery and maintenance training devices.</p> <p>FY 2022 Plans: In FY 2022 MPF gunnery and maintenance training device development performance specifications will be completed, requests for proposal will be released, and contracts will be awarded.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Increase due to award of training device development contracts at FY 2022 Milestone C.</p>		0.147	0.150	2.175
<p>Title: Government Engineering and Project Management</p> <p>Description: Government program management and system engineering support, to include salaries, travel, training, supplies, facilities, equipment, and support contractors necessary to manage development efforts during the MPF MTA Rapid Prototyping and LRIP phases.</p> <p>FY 2021 Plans: Continue the engineering, logistics, product assurance and test, financial management, and operations support for the MPF MTA Rapid Prototyping activities from November 2020 through October 2021. Will include salaries, training, travel, supplies, facilities, and equipment to manage MPF test and evaluation, logistics products development, Soldier touch-point feedback collection and</p>		12.982	12.548	11.354

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>	Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
analysis, system vulnerability and environmental impact assessments, and future capability enhancement acquisition strategy development. FY 2022 Plans: Continue the engineering, logistics, product assurance and test, financial management, and operations support for the MPF MTA Rapid Prototyping and LRIP development activities from November 2021 through October 2022. Will include salaries, training, travel, supplies, facilities, and equipment to manage MPF test and evaluation, logistics products development, system vulnerability and environmental impact assessments, and future capability enhancement acquisition strategy development. FY 2021 to FY 2022 Increase/Decrease Statement: Decrease from FY 2021 to FY 2022 is due to reduced levels of support as the program transitions from Rapid Prototyping to LRIP in the 3rd Quarter of FY 2022.			
Title: Government Support to Product Development Description: Government support to MPF MTA Rapid Prototyping efforts, to include Source Selection activities, and Large Caliber Weapon System development. FY 2021 Plans: Completion of Large Caliber Weapon System Safety Confirmation testing to secure safety release for SVA and inform the approval of material release to enable system fielding to Army IBCTs. FY 2022 Plans: Engineering, logistics, product assurance and test, financial management, acquisition, legal, and operations support for a November 2021 through June 2022 MPF Source Selection Evaluation Board (SSEB) to down-select to a single vendor for Low Rate Initial Production (LRIP). SSEB expenditures will include salaries, training, travel, supplies, facilities, and equipment. FY 2021 to FY 2022 Increase/Decrease Statement: Increase from FY 2021 to FY 2022 due to execution of SSEB in FY 2022.	2.561	1.064	7.916
Accomplishments/Planned Programs Subtotals	273.433	123.992	137.256

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• G80820: <i>Mobile Protected Firepower</i>	-	-	286.977	-	286.977	-	-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>	Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
------------------	----------------	----------------	-------------------------------	------------------------------	--------------------------------	----------------	----------------	----------------	----------------	-----------------------------------	-------------------

Remarks

Standard Serial Number (SSN) G80820 resources production of MPF. FY 2022 - FY 2024 resourcing supports MPF Low Rate Initial Production (LRIP). Resourcing in FY 2025 and beyond supports MPF Full Rate Production (FRP).

In FY 2022, funding in the amount of \$0.046 million for manpower was realigned to Operations and Maintenance. Program support costs have been accurately updated to reflect the realignments.

D. Acquisition Strategy

The MPF RFP was issued on 21 November 2017 as a full and open, best value competitive action. On 25 September 2018, the Army Acquisition Executive (AAE) approved the execution of MPF Rapid Prototyping activities under Section 804 of the 2016 National Defense Authorization Act (NDAA) (Public Law 114-92), Middle Tier Acquisition (Rapid Prototyping). The competitive selection process for MPF Rapid Prototyping contracts included the evaluation of written proposals and optional bid samples to provide additional substantiating data for Source Selection Evaluation. On 17 December 2018, two MPF Rapid Prototyping contracts were awarded, one to BAE Systems and the other to General Dynamics Land Systems (GDLS). A Source Selection Evaluation will be finalized to down-select to a single contractor for a Fixed Price Incentive (FPI) Low Rate Initial Production (LRIP) effort upon AAE Milestone C approval in 3rd Quarter, FY 2022. An MPF Full Rate Production (FRP) decision is targeted for 3rd Quarter, FY 2025.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower
--	---	--

Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Engineering and Project Management	MIPR	Various : Warren, MI; Picatinny, NJ	25.169	12.982	Dec 2019	12.548	Oct 2020	11.354	Nov 2021	-		11.354	20.808	82.861	-
Subtotal			25.169	12.982		12.548		11.354		-		11.354	20.808	82.861	N/A

Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Development - Middle Tier Acquisition (MTA) Rapid Prototyping Contracts	C/FFP	BAE Systems; General Dynamics Land Systems (GDLS) : Sterling Heights, MI; Sterling Heights, MI	360.874	249.276	Dec 2019	83.804	Oct 2020	27.718	Dec 2021	-		27.718	0.000	721.672	905.941
Product Development - Government Furnished Material (GFM) Procurement	Various	Various : Various	2.130	-		-		-		-		-	0.000	2.130	-
Product Development - LRIP Phase - LRIP Log Development and Contractor Support to Test	C/FFP	TBD : TBD	-	-		-		29.930	Jun 2022	-		29.930	120.106	150.036	-
Prototype Upgrade to LRIP Configuration	C/FFP	TBD : TBD	-	-		-		15.922	Jun 2022	-		15.922	0.000	15.922	-
LRIP Vehicles for Full-Up System-Level (FUSL) Live Fire	C/FPIF	TBD : TBD	-	-		-		35.709	Jun 2022	-		35.709	0.000	35.709	-
Subtotal			363.004	249.276		83.804		109.279		-		109.279	120.106	925.469	N/A

Remarks
 Product Development - Middle Tier Acquisition (MTA) Rapid Prototyping Contracts Remark: MTA Rapid Prototyping contract costs are inclusive of both competitors during the Mobile Protected Firepower (MPF) MTA Rapid Prototyping Phase (1st Quarter FY 2019 to 3rd Quarter FY 2022). Product Development reflects contract costs of a single vendor after Low Rate Initial Production (LRIP) down-select at Milestone C (3rd Quarter FY 2022).

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army												Date: May 2021			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev				EV8 / Mobile Protected Firepower							
Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Support to Product Development - Large Caliber Weapon System Development	PO	Armament Research, Development and Engineering Center (ARDEC); Watervliet Arsenal (WVA); Rock Island Arsenal (RIA) : Picatinny, NJ; Watervliet, NY; Rock Island, IL	7.963	2.561	Jan 2020	1.064	Dec 2020	-		-		-	0.000	11.588	-
Government Support to Product Development - Source Selection Evaluation Board (SSEB)	Various	Various : Various	5.002	-		-		7.916	Oct 2021	-		7.916	0.000	12.918	-
Training Aids and Devices Development	Various	Program Executive Office Simulation, Training and Instrumentation (PEO STRI) : Orlando, FL	0.005	0.147	Mar 2020	0.150	Apr 2021	2.175	Apr 2022	-		2.175	13.726	16.203	-
Subtotal			12.970	2.708		1.214		10.091		-		10.091	13.726	40.709	N/A
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test and Evaluation (Performance Test, Operational Test, Soldier Vehicle Assessment)	PO	Aberdeen Test Center (ATC); Yuma Test Center (YTC) : Aberdeen, MD; Yuma, AZ	9.307	8.467	Jan 2020	26.426	Nov 2020	6.532	Nov 2021	-		6.532	47.763	98.495	-
Subtotal			9.307	8.467		26.426		6.532		-		6.532	47.763	98.495	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army							Date: May 2021				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>			Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>				
	Prior Years	FY 2020		FY 2021		FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	410.450	273.433		123.992		137.256	-	137.256	202.403	1,147.534	N/A

Remarks

Fiscal Year (FY) 2019 funding supported the award of two Rapid Prototyping contracts to design and build 24 total Mobile Protected Firepower (MPF) prototypes (12 per vendor) and four Ballistic Hull & Turrets (two per vendor), the execution of armor coupon testing, and the completion of planning for FY 2020 Pre-Production Test (PPT). FY 2020 funding supported final assembly and delivery of MPF prototypes and BH&T assets, PPT, and development of MPF Technical Manuals (TM) and Training Support Packages (TSP). FY 2021 funding supported the continuation of PPT, completion of Limited User Testing (LUT), and continued development of MPF Logistics Products (Technical Manuals, Training Support Package, Repair Parts and Special Tools List). FY 2022 funding will complete Rapid Prototyping, execute Low Rate Initial Production (LRIP) source selection, and award LRIP phase contracts to continue logistics products development and procure long lead spares for Performance Qualification Test (PQT) and Initial Operational Test & Evaluation (IOT&E)

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Limited User Training (LUT)																												
Training Support Package (TSP) Development																												
Maintenance Task Analysis (MTA) and Level Of Repair Analysis																												
Technical Manual (TM) Development																												
TM Validation																												
TM Development Update																												
TM Verification																												
Corrosion Testing																												
Supportability Assessment (SA)																												
Logistics Demonstration (Log Demo)																												
Training Devices Requirements Refinement Performance Spec																												
Training Devices Product Development																												
Low Rate Initial Production (LRIP) Option #1 Award																												

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
LRIP Option #1 Deliveries																	LRIP Option #1 Deliveries											
Product Quality Test (PQT)																	PQT											
LRIP Option #2 Award																	5 LRIP Option #2 Award											
LRIP Option #2 Deliveries																	LRIP Option #2 Deliveries											
Initial Operational Test and Evaluation (IOT&E)																	IOT&E											
LRIP Option #3 Award																	6 LRIP Option #3 Award											
LRIP Option #3 Deliveries																	LRIP Option #3 Deliveries											
FRP Lot #1 Award																	8 FRP Lot #1 Award											
FRP Lot #1 Deliveries																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Section 804 MTA Rapid Prototyping Designation	4	2018	4	2018
Milestone C (MS C)	3	2022	3	2022
Full Rate Production (FRP) Decision	2	2025	2	2025
Full Material Release (FMR)	4	2025	4	2025
First Unit Equipped (FUE)	4	2025	4	2025
Request for Proposal (RFP) Release	1	2018	1	2018
Risk Reduction of Large Caliber Weapon System	3	2017	3	2021
Middle Tier Acquisition (MTA) Source Selection Evaluation Board (SSEB)	2	2018	1	2019
Rapid Prototyping Contract Awards	1	2019	1	2019
Mobile Protected Firepower (MPF) Rapid Prototyping Phase	1	2019	4	2022
Design Maturity Review (DMR)	3	2019	3	2019
Ballistic Hull & Turret (BH&T) Deliveries (4 BH&Ts)	1	2021	2	2021
BH&T Test Readiness Review (TRR)	1	2021	1	2021
BH&T Test	2	2021	4	2021
Prototype Deliveries (24 Prototypes)	3	2020	4	2021
Pre-Production Test (PPT)	4	2020	2	2022
Soldier Vehicle Assessment (SVA) Readiness Review (RR)	1	2021	1	2021
SVA	2	2021	4	2021
Limited User Training (LUT)	4	2021	1	2022
Training Support Package (TSP) Development	2	2019	3	2022
Maintenance Task Analysis (MTA) and Level Of Repair Analysis (LORA)	2	2019	3	2022
Technical Manual (TM) Development	2	2019	3	2022

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>	Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>
--	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
TM Validation	3	2021	3	2022
TM Development Update	1	2023	4	2024
TM Verification	2	2024	4	2024
Corrosion Testing	4	2022	4	2023
Supportability Assessment (SA)	1	2022	1	2022
Logistics Demonstration (Log Demo)	1	2024	2	2024
Training Devices Requirements Refinement Performance Spec Development	2	2019	3	2022
Training Devices Product Development	3	2022	3	2025
Low Rate Initial Production (LRIP) Option #1 Award	3	2022	3	2022
LRIP Option #1 Deliveries	1	2024	1	2025
Product Quality Test (PQT)	1	2024	1	2025
LRIP Option #2 Award	3	2023	3	2023
LRIP Option #2 Deliveries	1	2025	1	2026
Initial Operational Test and Evaluation (IOT&E)	4	2024	1	2025
LRIP Option #3 Award	3	2024	3	2024
LRIP Option #3 Deliveries	1	2026	1	2027
FRP Lot #1 Award	3	2025	3	2025
FRP Lot #1 Deliveries	1	2027	1	2028