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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army **Date:** April 2022

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0603645A / Armored System Modernization - Adv Dev
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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	-	130.485	164.328	49.944	-	49.944	43.935	23.649	23.617	23.827	0.000	459.785
EV7: Combat Vehicle Prototyping	-	130.485	164.328	49.944	-	49.944	43.935	23.649	23.617	23.827	0.000	459.785

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Next Generation Combat Vehicle (NGCV) Army Modernization Priority. Armored System Modernization Advanced Development provides maturation of emerging Science and Technology (S&T) and industry technologies for potential integration to ground combat vehicles. The purpose of this Program Element's (PE) funding is to demonstrate new capabilities to meet current and future military needs and to determine integration potential across the Army portfolio of ground combat vehicles by testing and evaluating a variety of technologies.

The total cost of the RCV(L) MTA Rapid Prototyping program is \$452.77 million (then-year dollars) RDT&E from FY 2022 to FY 2026. The RCV(L) MTA Rapid Prototyping program is fully funded across the Future Years Defense Program.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	138.685	170.590	0.000	-	0.000
Current President's Budget	130.485	164.328	49.944	-	49.944
Total Adjustments	-8.200	-6.262	49.944	-	49.944
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-10.250			
• Congressional Rescissions	-	-			
• Congressional Adds	-	4.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-8.200	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	49.944	-	49.944
• FFRDC Transfer	-	-0.012	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: EV7: Combat Vehicle Prototyping

Congressional Add: Program increase - Advanced Combat Engine

Congressional Add Subtotals for Project: EV7

	FY 2021	FY 2022
	-	4.000
Congressional Add Subtotals for Project: EV7	-	4.000

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Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2021		FY 2022
	Congressional Add Totals for all Projects	-		4.000

Change Summary Explanation

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

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Army										Date: April 2022		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603645A / <i>Armored System Modernization - Adv Dev</i>				Project (Number/Name) EV7 / <i>Combat Vehicle Prototyping</i>			
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
<i>EV7: Combat Vehicle Prototyping</i>	-	130.485	164.328	49.944	-	49.944	43.935	23.649	23.617	23.827	0.000	459.785
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Armored System Modernization Advanced Development will continue the maturation of emerging ground combat vehicle capabilities to provide a bridge from S&T investment to application on a vehicle platform, informing requirements through User Evaluations, identification of capability gaps and reduction of integration risks. Maturing emerging technologies like those in Project Convergence will enable ground combat platforms to meet the Army's strategy of fielding key Modernization efforts.

The funding will support virtual and physical concept development, trade studies, technical and operational analyses to assess future concepts and designs. This would also include the support for survivability, lethality and other soldier defined system requirements. In addition, this funding will provide program management, expertise and a business process for the maturation and transition of emerging Science and Technology systems, system integration labs, technology demonstration efforts risk reduction, maturation, testing and assessment, and develop and integrate systems for Ground Combat Systems (GCS) platforms.

The total cost of the RCV(L) MTA Rapid Prototyping program is \$452.77 million (then-year dollars) RDT&E from FY 2022 to FY 2026. The RCV(L) MTA Rapid Prototyping program is fully funded across the Future Years Defense Program.

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

	FY 2021	FY 2022	FY 2023
Title: Government Engineering & Program Management	15.162	8.097	6.226
Description: This effort will support Program Management Office (PMO) support that will cover the costs of government and direct support contractor labor, travel, training, supplies, equipment and facilities to manage the experimental prototyping projects.			
FY 2022 Plans: This funding will support Government program management that will cover the costs of government and direct support contractor labor, travel, training, supplies, equipment and facilities to manage the experimental prototyping program as well as the Program Management Office (PMO). This funding will be allocated for the program management support for Advanced Combat Powertrain, Advanced Combat Vehicle Concepts and Studies, Aided Target Recognition (AiTR), MET-D, and Bradley Hybrid Electric Vehicle (BHEV), XM913 and other combat vehicle technology advancement efforts. It will fund the management and support costs of experimental prototyping projects, continued technology maturation, and applicable software and data architecture updates.			
FY 2023 Plans:			

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Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603645A / <i>Armored System Modernization - Adv Dev</i>	Project (Number/Name) EV7 / <i>Combat Vehicle Prototyping</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>This funding will support Government oversight and project management of planned efforts which will cover government salaries, contractor labor, travel, training, supplies, equipment and facilities costs.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The decrease from Fiscal Year (FY) 2022 to FY 2023 is due to the conversion of core government project management salaries to Operations and Maintenance, Army (OMA), Sub-Activity Group (SAG) 435, Acquisition Support to Program Executive Office (PEO) Ground Combat Systems (GCS).</p>				
<p>Title: Developmental Engineering</p> <p>Description: Efforts will include the continued development and maturation of advanced technology concepts for ground combat vehicles and related support equipment.</p> <p>FY 2022 Plans: This funding for the Ground Vehicle Systems Center (GVSC) will mature the Advanced Combat Engine (ACE) and the Advanced Combat Transmission (ACT) to be ready for production at the end of FY24. A potential target for this effort is the Optionally Manned Fighting Vehicle (OMFV) and other combat vehicle platforms.</p> <p>This funding continues the work to develop the hybrid electric vehicle based on a Bradley platform. The contractor will build, integrate and test a Bradley with components that make up a Hybrid Electric Vehicle. The benefit to the Warfighter is that this will improve survivability by reducing thermal and acoustic signature, provides acceleration, improves lethality, more onboard power for energy based-capabilities such as High Energy Lasers, improved operational endurance/fuel efficiency to start.</p> <p>Other efforts include but are not limited to Advanced Combat Vehicle Concepts and Studies, Aided Target Recognition (AiTR), MET-D and other combat vehicle technology advancement efforts.</p> <p>FY 2023 Plans: This funding will further refine Advanced Combat Powertrain (ACP) maturation, which is comprised of the Advanced Combat Engine (ACE) and the Advanced Combat Transmission (ACT), to support production by FY24. A potential transition partner for this effort is the Optionally Manned Fighting Vehicle (OMFV), but could be applied to other combat vehicle platforms. Other Developmental Engineering efforts include but are not limited to 2nd Source High Voltage Power Controller, MUM-T, OMT, Combat Vehicle Light-weighting, Project Origin, Data Architecture Efforts and other combat vehicle technology advancement efforts. These advanced development efforts will support performance analysis, trade space analysis, capabilities assessments, and hardware demonstrations to support the emerging technologies to support the Army's Modernization Strategy.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p>		-	79.591	23.737

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
The decrease from Fiscal Year (FY) 2022 to FY 2023 is due to lower resourcing levels for the Advanced Combat Vehicle Concepts and Studies effort and completion of the MET-D (Phase II), Bradley Hybrid Electric Vehicle and XM913 efforts in FY22.				
<p>Title: Test & Evaluation</p> <p>Description: Test and Evaluation (T&E) activities include contractor and government testing of prototype vehicles and technologies as well as user evaluations. Testing will be conducted using United States Army test facilities.</p> <p>FY 2022 Plans: T&E efforts include but are not limited to: Advanced Combat Vehicle Concepts and Studies, Bradley Hybrid Electric Vehicle, MET-D, Next Generation Fire Control (NGFC) Technologies, Vehicle Protection Technology Demonstrator, XM913 and other emerging combat vehicle technology advancements.</p> <p>FY 2023 Plans: T&E efforts include but are not limited to: Project Origin soldier assessment efforts, Advanced Combat Powertrain Maturation, Combat Vehicle Light-weighting, High Voltage Power Controller, Tank Modernization, MUM-T, OMT, Aided Target Recognition (AiTR), and other emerging combat vehicle technology advancements. To assist in determining future requirements while evaluating maturation level and aid in determination of bridging to S&T efforts above to vehicle platforms.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The decrease from Fiscal Year (FY) 2022 to FY 2023 is due to lower resourcing levels for the Advanced Combat Vehicle Concepts and Studies effort and completion of the MET-D (Phase II), Bradley Hybrid Electric Vehicle and XM913 efforts in FY22.</p>		13.364	36.108	8.737
<p>Title: Modeling & Simulation</p> <p>Description: Modeling and simulation efforts will allow for the ability to experiment with various technologies in a virtual environment. Support will include reviewing studies conducted and determining any significant issues, areas of concern or potential differences to aid in decision making. The results will provide the analytical underpinnings to support development of requirements.</p> <p>FY 2022 Plans: Government support needed for MET-D Phase II for platform assessment thru modeling and analysis, conduct trade studies, and the ability to assess the platform in a virtual environments to aide in decision making.</p> <p>FY 2023 Plans: This funding will support Optionally Manned Tank (OMT) and other Combat Vehicle efforts to analyze and assess technologies in a virtual environment to aide in decision making.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p>		7.407	0.388	0.500

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
The increase from Fiscal Year (FY) 2022 to FY 2023 is due to Optionally Manned Tank requirements for supporting crew task analysis, vulnerability analysis, operational effectiveness modeling, performance and trade space analysis.				
<p>Title: Experimental Prototyping</p> <p>Description: Experimental prototyping allows for maturation of emerging S&T and industry technologies to inform requirements, identify mitigations for capability gaps and reduce technology integration and program risks for emerging technologies. The funding will support prototyping for XM913, Advanced Combat Powertrain, Advanced Combat Vehicle Concepts and Studies, Advanced Lightweight Track, High Voltage Power Controller, MET-D Phase II, Vehicle Protection Technology Demonstrator, Project Origin Soldier Operational Experiment Campaign, Data Architecture and Other Technology Advancements.</p> <p>FY 2022 Plans: This funding will support prototype builds for the following technologies: XM913, Advanced Combat Powertrain, Advanced Combat Vehicle Concepts and Studies, Advanced Lightweight Track, High Voltage Power Controller, MET-D Phase II, Vehicle Protection Technology Demonstrator and Other Technology Advancements.</p> <p>FY 2023 Plans: This funding will support prototype design, builds, validation/verification, and maintenance for MUM-T, OMT, Project Origin Soldier Operational Experiment (SOE) Campaign, 2nd Source High Voltage Power Controller and Other Technology Advancement efforts.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The decrease from Fiscal Year (FY) 2022 to FY 2023 is due to lower resourcing levels for the Advanced Combat Vehicle Concepts and Studies effort and completion of the MET-D (Phase II) and XM913 efforts in FY22.</p>		31.508	30.291	10.744
<p>Title: Powertrain Maturation</p> <p>Description: This effort will advance the Advanced Combat Engine (ACE) and the Advanced Combat Transmission (ACT) subsystem maturity and reduce engine and transmission cost and manufacturing time. The Ground Vehicle Systems Center (GVSC) will conduct maturation and demonstration activities to expedite technology transition from laboratory to operational use and prepare for low rate initial production of the advanced combat engine and transmission. This effort will conduct the evaluation of reliability, maintainability, and logistical analyses necessary to transition to a vehicle platform and conduct maturation to the components as a result of these evaluations. The ACE may increase Power Density, increase efficiency (> 48%), and decrease heat rejection (> 20%). The ACT will have advanced Multi-Speed Transmissions and be adaptable to a wide range of engine input speeds, flexible design configuration and packaging, high efficiency geared steering system and > 90% efficiency in all gears.</p>		4.000	-	-
Title: Other support & technology costs		59.044	-	-

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Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603645A / Armored System Modernization - Adv Dev	Project (Number/Name) EV7 / Combat Vehicle Prototyping

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
Description: This effort from the Ground Vehicle Systems Center is to support the Optionally Manned Tank and various technology sprints or advancements.			
Title: SBIR/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	-	5.853	-
Accomplishments/Planned Programs Subtotals	130.485	160.328	49.944

	FY 2021	FY 2022
Congressional Add: Program increase - Advanced Combat Engine FY 2022 Plans: This effort improves engine subsystem designs, optimizes performance, and funds engine units for vehicle demonstration.	-	4.000
Congressional Adds Subtotals	-	4.000

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

N/A

Remarks

D. Acquisition Strategy

These level of efforts provide the focused investment for the development and demonstration of technology and prototyping for future combat vehicles in the battlefield. The intent of this funding is to mature the next generation of technology which will enable demonstration of capabilities developed in the S&T portfolio to meet emerging military needs across the current Army portfolio of ground vehicles.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army **Date:** April 2022

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603645A / Armored System Modernization - Adv Dev	Project (Number/Name) EV7 / Combat Vehicle Prototyping
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Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SBIR/STTR Transfer	TBD	Various : Various	-	-		5.853		-		-		-	0.000	5.853	-
Subtotal			-	-		5.853		-		-		-	0.000	5.853	N/A

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
NGCV Contract(s)	C/Various	Various : Various	81.508	-		-		-		-		-	0.000	81.508	-
Prototyping with Industry	C/Various	Various : Various	95.019	-		-		-		-		-	0.000	95.019	-
Powertrain Maturation	Various	Various : Various	0.908	4.000	Jul 2021	-		-		-		-	Continuing	Continuing	Continuing
Other support & technology costs	Various	Various : Various	-	59.044	Jul 2021	-		-		-		-	Continuing	Continuing	Continuing
Experimental Prototyping	Various	Various : Various	-	31.508	Jul 2021	30.291	Jun 2022	10.744	Jun 2023	-		10.744	Continuing	Continuing	Continuing
Developmental Engineering	Various	Various : Various	-	-		79.591	Jun 2022	23.737		-		23.737	0.000	103.328	-
Program increase - Advanced Combat Engine	Various	Various : Various	-	-		4.000	Jun 2022	-		-		-	0.000	4.000	-
Subtotal			177.435	94.552		113.882		34.481		-		34.481	Continuing	Continuing	N/A

Remarks
 Program decrease experimental prototyping costs by \$15,464K in FY21.
 Congressional add \$8,200K for Next Generation Electrified Transmission in FY21.

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Program Management	Various	PM/PEO : Warren, MI	40.698	15.162	Jan 2021	8.097	Jan 2022	6.226	Jan 2023	-		6.226	Continuing	Continuing	Continuing
Subtotal			40.698	15.162		8.097		6.226		-		6.226	Continuing	Continuing	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603645A / Armored System Modernization - Adv Dev	Project (Number/Name) EV7 / Combat Vehicle Prototyping

Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
MET-D Phase 2 Build	[Redacted]																											
MET-D Phase 2 Testing					[Redacted]																							
MET-D Phase 2 Soldier Operational Evaluation (SOE)									3 SOE																			
MET-D Phase 2 Project Finish									5 MET-D Phase 2 Project Finish																			
XM913 Weapon Improvements and TDP Development	[Redacted]				[Redacted]				[Redacted]																			
XM913 Subscale Muzzle Brake Erosion Test (30mm)					[Redacted]																							
XM913 Environmental Testing					[Redacted]																							
Bradley Hybrid Electric Vehicle (BHEV) Development	[Redacted]				[Redacted]																							
Bradley Hybrid Electric Vehicle Prototype Build/Integration					[Redacted]																							
Bradley Hybrid Electric Vehicle APG Test									[Redacted]																			
Bradley Hybrid Electric Vehicle YPG Test									[Redacted]																			
Bradley Hybrid Electric Vehicle Transition Decision									6 Bradley Hybrid Electric Vehicle Transition Decision																			
Advanced Combat Vehicle Concepts and Studies	[Redacted]				[Redacted]				[Redacted]																			

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
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Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Advanced Lightweight Track (ALWT) Development																												
Advanced Lightweight Track (ALWT) Validation Testing																												
SPHS Lightweighting Prototype Development																												
SPHS Lightweighting Testing																												
High Voltage Power Controller (HVPC) Prototype																												
High Voltage Power Controller (HVPC) Testing																												
High Voltage Power Controller (HVPC) 2nd Source Development																												
High Voltage Power Controller 2nd Source Prototype Build																												
High Voltage Power Controller 2nd Source Test																												
High Voltage Power Controller 2nd Source Transition Decision																												
Advanced Combat Powertrain Production Design Mechanical Verification																												
Advanced Combat Powertrain Refinement																												
Advanced Combat Powertrain Design Refinement Build																												

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Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603645A / Armored System Modernization - Adv Dev	Project (Number/Name) EV7 / Combat Vehicle Prototyping

Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Advanced Combat Powertrain Field Test Support and FACAR Review																												
Advanced Combat Powertrain Design Validation Plan																												
Advanced Combat Powertrain Design CAD																												
Advanced Combat Powertrain Field Test																												
Abrams Lightweight Running Gear Casting Prototype																												
Abrams Lightweight Running Gear Lab Prototype																												
Abrams Lightweight Running Gear Vehicle Prototype Set																												
MUM-T Manned Control Vehicles (MCV) Development																												
MUM-T Manned Control Vehicles (MCV) Prototypes																												
MUM-T Manned Control Vehicles (MCV) Test																												
MUM-T - Protected Comms (PCM) C5ISR Modular Open Suite of Standards (CMOSS)																												
MUM-T - Protected Comms (PCM) CMOSS Prototypes Build																												
MUM-T - Protected Comms (PCM) CMOSS Prototypes Test																												

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Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Stryker Energy Attenuating (EA) Seat Development					Stryker EA Seat Development																							
Stryker Energy Attenuating (EA) Seat Hardware Evaluation													Stryker EA Seat Hardware Evaluation															
Stryker Energy Attenuating (EA) Seat Transition Decision													10 Stryker EA Seat Down Select															
AMERCA-M Prototype Build									AMERCA-M Prototype Build																			
AMERCA-M Design									AMERCA-M Design																			
AMERCA-M Track and Suspension CDR									1 AMERCA-M Track and suspension CDR																			
AMERCA-M Powertrain CDR									2 AMERCA-M Powertrain CDR																			
AMERCA-M Build Complete													7 AMERCA-M Build Complete															
AMERCA-M Dynamometer Testing													AMERCA-M Dynamometer Testing															
AMERCA-M Test Site T&E																	AMERCA-M Test Site T&E											
Tank Modernization Design					Tank Modernization Design																							
Tank Modernization Build									Tank Modernization Build																			
Tank Modernization Test													Tank Modernization Test															

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Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Soft Kill System Advancements - Countermeasure Development																												
Soft Kill System Advancements - Countermeasure Prototype Build																												
Soft Kill System Advancements - Countermeasure Test																												
Soft Kill System Advancements - Countermeasure Techniques Test																												
Soft Kill System Advancements - Countermeasure Transition Decision																												
Optionally Manned Tank (OMT) Development/Design/Modeling																												
Optionally Manned Tank (OMT) Build																												
Optionally Manned Tank (OMT) Soldier Touch Point																												
Optionally Manned Tank (OMT) Experiment																												
AiTR Phase II SW & Algorithm Improvements																												
AiTR Phase II Test																												
AiTR Phase II Data Collection																												
AiTR Phase II Algorithm Improvement																												

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Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
AiTR Phase II Test 2																												
AiTR Phase III 3GF Test & Evaluation																												
Data Architecture Library																												
Data Architecture Model																												
Project Origin Soldier Experiments																												

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

Events	Start		End	
	Quarter	Year	Quarter	Year
MET-D Phase 2 Build	2	2020	2	2021
MET-D Phase 2 Testing	4	2021	3	2022
MET-D Phase 2 Soldier Operational Evaluation (SOE)	4	2022	4	2022
MET-D Phase 2 Project Finish	1	2023	1	2023
XM913 Weapon Improvements and TDP Development	4	2020	1	2023
XM913 Subscale Muzzle Brake Erosion Test (30mm)	3	2021	4	2021
XM913 Environmental Testing	1	2022	3	2022
Bradley Hybrid Electric Vehicle (BHEV) Development	3	2020	3	2022
Bradley Hybrid Electric Vehicle Prototype Build/Integration	4	2021	1	2022
Bradley Hybrid Electric Vehicle APG Test	3	2022	1	2023
Bradley Hybrid Electric Vehicle YPG Test	4	2022	1	2023
Bradley Hybrid Electric Vehicle Transition Decision	1	2023	1	2023
Advanced Combat Vehicle Concepts and Studies	2	2021	3	2023
Advanced Lightweight Track (ALWT) Development	4	2021	4	2022
Advanced Lightweight Track (ALWT) Validation Testing	3	2021	4	2021
SPHS Lightweighting Prototype Development	1	2022	3	2022
SPHS Lightweighting Testing	4	2022	4	2023
High Voltage Power Controller (HVPC) Prototype	2	2021	3	2022
High Voltage Power Controller (HVPC) Testing	3	2022	3	2023
High Voltage Power Controller (HVPC) 2nd Source Development	1	2023	4	2023
High Voltage Power Controller 2nd Source Prototype Build	4	2023	4	2023
High Voltage Power Controller 2nd Source Test	1	2024	2	2024

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

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603645A / Armored System Modernization - Adv Dev	Project (Number/Name) EV7 / Combat Vehicle Prototyping
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Events	Start		End	
	Quarter	Year	Quarter	Year
High Voltage Power Controller 2nd Source Transition Decision	2	2024	2	2024
Advanced Combat Powertrain Production Design Mechanical Verification	4	2021	1	2022
Advanced Combat Powertrain Refinement	4	2021	2	2022
Advanced Combat Powertrain Design Refinement Build	2	2022	4	2022
Advanced Combat Powertrain Field Test Support and FACAR Review	3	2022	4	2022
Advanced Combat Powertrain Design Validation Plan	4	2022	2	2023
Advanced Combat Powertrain Design CAD	2	2023	3	2023
Advanced Combat Powertrain Field Test	2	2023	2	2024
Abrams Lightweight Running Gear Casting Prototype	1	2023	3	2023
Abrams Lightweight Running Gear Lab Prototype	1	2024	2	2024
Abrams Lightweight Running Gear Vehicle Prototype Set	3	2024	1	2025
MUM-T Manned Control Vehicles (MCV) Development	2	2022	2	2024
MUM-T Manned Control Vehicles (MCV) Prototypes	3	2022	3	2024
MUM-T Manned Control Vehicles (MCV) Test	4	2022	2	2023
MUM-T- Protected Comms (PCM) C5ISR Modular Open Suite of Standards (CMOSS) Dev	1	2022	3	2022
MUM-T - Protected Comms (PCM) CMOSS Prototypes Build	2	2022	3	2022
MUM-T - Protected Comms (PCM) CMOSS Prototypes Test	4	2022	4	2022
Stryker Energy Attenuating (EA) Seat Development	1	2022	3	2023
Stryker Energy Attenuating (EA) Seat Hardware Evaluation	2	2023	2	2023
Stryker Energy Attenuating (EA) Seat Transition Decision	3	2023	3	2023
AMERCA-M Prototype Build	3	2022	1	2023
AMERCA-M Design	3	2022	4	2022
AMERCA-M Track and Suspension CDR	3	2022	3	2022
AMERCA-M Powertrain CDR	3	2022	3	2022
AMERCA-M Build Complete	1	2023	1	2023

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

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603645A / Armored System Modernization - Adv Dev	Project (Number/Name) EV7 / Combat Vehicle Prototyping
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Events	Start		End	
	Quarter	Year	Quarter	Year
AMERCA-M Dynamometer Testing	1	2023	3	2023
AMERCA-M Test Site T&E	2	2023	4	2023
Tank Modernization Design	1	2021	2	2022
Tank Modernization Build	2	2022	4	2022
Tank Modernization Test	1	2023	4	2023
Soft Kill System Advancements - Countermeasure Development	4	2021	4	2022
Soft Kill System Advancements - Countermeasure Prototype Build	4	2021	2	2022
Soft Kill System Advancements - Countermeasure Test	3	2022	3	2022
Soft Kill System Advancements - Countermeasure Techniques Test	4	2022	4	2022
Soft Kill System Advancements - Countermeasure Transition Decision	4	2022	4	2022
Optionally Manned Tank (OMT) Development/Design/Modeling	4	2021	2	2023
Optionally Manned Tank (OMT) Build	2	2022	2	2023
Optionally Manned Tank (OMT) Soldier Touch Point	2	2023	2	2023
Optionally Manned Tank (OMT) Experiment	3	2023	3	2023
AiTR Phase II SW & Algorithm Improvements	4	2020	2	2021
AiTR Phase II Test	1	2022	2	2022
AiTR Phase II Data Collection	2	2022	2	2022
AiTR Phase II Algorithm Improvement	2	2022	2	2022
AiTR Phase II Test 2	3	2022	4	2022
AiTR Phase III 3GF Test & Evaluation	1	2023	3	2023
Data Architecture Library	1	2022	1	2023
Data Architecture Model	2	2022	4	2022
Project Origin Soldier Experiments	2	2022	4	2026