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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army **Date:** March 2024

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	49.609	91.323	116.027	-	116.027	106.947	71.785	53.947	54.486	Continuing	Continuing
CD8: <i>Long Range Precision Munition (LRPM)</i>	-	12.781	43.693	46.742	-	46.742	59.645	24.591	9.381	9.475	0.000	206.308
EC3: <i>Ammunition Logistics Prototyping</i>	-	1.772	1.892	1.935	-	1.935	1.936	1.956	1.977	1.997	0.000	13.465
FA5: <i>Assured Precision Weapons and Munitions</i>	-	35.056	45.738	48.096	-	48.096	41.680	42.119	42.589	43.014	Continuing	Continuing
FG1: <i>Cannon-Delivered Area Effects Munitions (C-DAEM)</i>	-	-	-	19.072	-	19.072	-	-	-	-	0.000	19.072
XT5: <i>30mm Anti-Personnel and Counter UAS</i>	-	-	-	0.182	-	0.182	3.686	3.119	-	-	0.000	6.987

Note

Project FG1 / Cannon-Delivered Area Effects Munitions (C-DAEM) is a new start within the Tank and Medium Caliber Ammunition program in FY 2025
 Project XT5 / 30mm Anti-Personnel and Counter UAS is a new start within the Tank and Medium Caliber Ammunition program in FY 2025

A. Mission Description and Budget Item Justification

A portion of this funding line is directly aligned to each Future Vertical Lift (FVL) and Assured Positioning, Navigation, & Timing (APNT) Army Modernization Priorities. The Tank and Medium Caliber Ammunition Program Element encompasses a comprehensive program to develop, rapidly transition to production, and field advanced weapons and munitions for small, medium and large caliber munitions, tank ammunition, mortar ammunition, cannon artillery ammunition, and close combat system items. These Projects will ensure continued battlefield overmatch and lethality of United States maneuver forces against the full range of modern battlefield threats. To achieve this, Tank and Medium Caliber Ammunition projects will identify and develop promising technologies through competitive development and streamlined acquisition procedures.

Project CD8 - Long Range Precision Munition (LRPM) is an Army Weapon that will provide leap ahead lethal capability in the penetration and dis-integration phases of Joint All Domain Operations (JADO). The ability to interoperate and coordinate with other weapon systems and munitions at long ranges and adapt to changing threats is a core concept of the Army Aviation Weapons, Sub-Systems, and Munitions Initial Capability Document validated in July 2018. Primary target set for LRPM is Integrated Air Defense Systems. LRPM lethal capabilities are aligned with the Launched Effects (LE) family of systems. LRPM will provide Army Aviation Forces with a precise long range munition system to rapidly respond in a combat environment to improve the lethality and stand-off of Warfighters and aviation platforms in an Anti-Access Area Denial (A2AD) and positioning, navigation, and timing (PNT) denied environment.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	
<p>Project EC3 - Ammunition Logistics Prototyping: This Project supports the future force by improving the distribution, management, reliability and survivability of ammunition through the advanced development, integration, and demonstration of logistics system enablers supporting the Design of Army 2040. These enablers will improve the efficiency and effectiveness of ammunition operations, to include retrograde, while reducing the logistics footprint on the battlefield. Technology areas addressed include handling, distribution, and management (strategic and tactical), prognostics, diagnostics, and asset visibility, explosives safety, and autonomous friendly packaging and palletization. The efficient deployment and sustainment of reliable ammunition is vital to success on the battlefield. This Project enhances the operational effectiveness of the ammunition logistics system to ensure the distribution of reliable ammunition to the warfighter. Fiscal Year 2025 funding will be used to further mature munition health monitoring devices in accordance with the needs of the relevant PMs. Funding will be used to directly to support Contested Logistics, Long Range Precision Fire CFTs munition asset visibility and health monitoring requirements throughout the ammunition supply chain and resupply process. Specifically, the funding will be used to address improvements to the ammunition supply chain within the maneuver force.</p> <p>Project FA5 - The Assured Precision Weapons and Munitions (APWM): FA5 Project is focused on advanced risk mitigation, technology integration, prototyping, and product support to identify, evaluate, mature, test, and demonstrate various assured precision prototype technologies in Weapon and Munitions (W&M) components and subsystems within a complex System-of-Systems (SoS) environment. The APWM Project reinforces the National Defense Strategy's (NDS) major lines of effort through technology development and prototyping, which increases lethality and ensures future combat overmatch success of the Joint Force against peer/near-peer adversaries. This Project also aims to improve program performance and affordability for multiple W&M Programs of Record (PoRs) via Joint Lethality Positioning, Navigation and Timing (PNT), Navigation Warfare (NavWar), and Army M-Code Global Positioning System (GPS) coordinated efforts. The APWM Project directly supports the top Army Modernization Priorities via the Assured PNT (APNT) and Long Range Precision Fires (LRPF) imperatives in support of the NDS and multiple Public Law related Congressional imperatives. Funding will support engagement by W&M PNT experts in the development, evaluation, and technology delivery activities of the US Space Force's (USSF) M-Code GPS, Army's PNT related programs, and APNT/Space Cross Functional Team (CFT) programs in support of LRPF and Counter Anti-Access/Area Denial (A2/AD) missions. Funding will also enable component and subsystem architecture input essential for Precision W&M operating in a NavWar SoS environment, Army M-Code GPS technology integration and evaluation, planning and evaluating next generation M-Code GPS to validate capability for future Joint precision munitions, and maturation of alternative PNT and NavWar related technologies and solutions to enable informed APNT related PoR milestone and Army cross-functional modernization decisions.</p> <p>Project FG1 - The Cannon Delivered Area Effects Munitions (C-DAEM) Budget Activity Four (BA4) is a new start project in Fiscal Year 2025 (FY25). The XM1155 projectile, transitioning from Budget Activity Three (BA3) PE 0603464A / Long Range Precision Fires Advanced Technology Project BO8 Long Range Precision Fires Advanced Tech), will deliver lethality and range overmatch in 155mm artillery weapon systems at more than double the current range from legacy artillery cannons and will be compatible in future 155MM artillery systems in a Global Positioning System (GPS) degraded and denied environments. The XM1155 projectile, developed as part of an organic Long Range Precision Fires capability, will provide overmatching cannon artillery range capability at both Tactical and Operational Fires range by shaping the nature of the close fight through seeking moving and imprecisely located targets at extended ranges, will increase range capability of the current 39 caliber cannon fleet and will also be compatible with future 52 caliber and above artillery weapon systems. FY 2025 funding will support technology maturation and risk reduction of key system and subsystems, improvements in performance in difficult use cases, and integration of the tactical warhead and seeker culminating in a series of Design Verification Testing (DVT) to achieve Technology Readiness Level (TRL) six (6) maturity.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>
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Project XT5 - 30mm Anti-Personnel and Counter Unmanned Aerial Systems (UAS): Airburst capability is identified as a threshold Key System Attribute (KSA) in Apache Block 3 Capability Production Document (CPD) - approved 14 June 2017 and other cannon caliber Operational Needs Statements (ONS) and Capability Development Documents (CDD). The Anti-Personnel and Counter Unmanned Aerial Systems (UAS) munition provides increased lethality through airburst effects against personnel, small boats, and small Unmanned Aerial Systems (UAS) without requiring modification to the platform. Fiscal Year (FY) 2025 funds support developing performance specifications and contract preparation to begin development and testing.

B. Program Change Summary (\$ in Millions)	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>
Previous President's Budget	51.488	91.323	99.578	-	99.578
Current President's Budget	49.609	91.323	116.027	-	116.027
Total Adjustments	-1.879	0.000	16.449	-	16.449
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.879	-			
• Adjustments to Budget Years	-	-	16.449	-	16.449

Change Summary Explanation

Increase due to new start efforts for Cannon Delivered Area Effects Munitions (C-DAEM) and 30mm Anti Personnel and Counter UAS in FY25.

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army										Date: March 2024		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603639A / Tank and Medium Caliber Ammunition				Project (Number/Name) CD8 / Long Range Precision Mmunition (LRPM)			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
CD8: Long Range Precision Mmunition (LRPM)	-	12.781	43.693	46.742	-	46.742	59.645	24.591	9.381	9.475	0.000	206.308
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Long Range Precision Mmunition (LRPM) is an Army Weapon that will provide leap ahead lethal capability in the penetration and dis-integration phases of Joint All Domain Operations (JADO). The ability to interoperate and coordinate with other weapon systems and munitions at long ranges and adapt to changing threats is a core concept of the Army Aviation Weapons, Sub-Systems, and Munitions Initial Capability Document validated in July 2018. Primary target set for LRPM is Integrated Air Defense Systems. LRPM lethal capabilities are aligned with the Launched Effects (LE) family of systems. LRPM will provide Army Aviation Forces with a precise long range munition system to rapidly respond in a combat environment to improve the lethality and stand-off of Warfighters and aviation platforms in an Anti-Access Area Denial (A2AD) and positioning, navigation, and timing (PNT) denied environment.

FY 2025 dollars in the amount of \$49.648 million includes lethal munition prototyping, technology design and development, component testing, and technical evaluations with vendor(s) leading to a design review.

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

	FY 2023	FY 2024	FY 2025
Title: Long Range Precision Mmunition	12.781	43.693	46.742
Description: This line funds the demonstration, development, and validation of a munition system that will engage and render desired lethal effects on targets at ranges beyond line of sight. The lethal munition development effort includes demonstration and validation of precision guided munitions with the capability to complete the assigned mission in environments that could include cyber-attack, countermeasures, counter precision guided munition systems, and anti-access area denial environments. These efforts will include technical assessments, concept studies, performance of risk reduction efforts, technology maturation, engineering design, engineering / manufacturing development, test, demonstration of prototype hardware, platform integration, and document preparation for associated contract and acquisition efforts.			
FY 2024 Plans: Technology maturation and risk reduction efforts continue. Design Maturity, Modeling and Simulation maturation, and Prototype development will continue. Vendor(s) to provide deliverable(s) to include design and Modeling and Simulation. Continue LRPM program acquisition and contract documentation preparation and coordination. Complete acquisition activities & technical evaluations leading to an acquisition decision and contract award(s) to mature the LRPM design and modeling and simulation to determine system of systems technical feasibility.			
FY 2025 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) CD8 / <i>Long Range Precision Munition (LRPM)</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>Mature design and Modeling and Simulation and continue Prototype development. Vendor(s) deliverable(s) to include design, Modeling and Simulation, prototyping, technology studies, design and development, testing, and technical evaluations leading to a design review with vendor(s).</p> <p><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i> Increase is due to increased system engineering and modeling and simulation activities and the continuation of vendor competition, material maturation, and development activities leading to a future design review.</p>				
Accomplishments/Planned Programs Subtotals		12.781	43.693	46.742
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
Acquisition pathway decision is projected to occur FY 2024 after approval of the A-CDD. Contract award projected for 4Q FY 2024 to begin technology design and development activities. Subsequent option award is projected for 2Q FY 2025 to continue design, development, and begin prototype and component-level testing.				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 4				PE 0603639A / Tank and Medium Caliber Ammunition				CD8 / Long Range Precision Munition (LRPM)							
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
Systems Engineering/ Program Management	Various	Various Performers : Various	-	4.446	Nov 2022	3.750	Nov 2023	4.758	Nov 2024	-		4.758	0.000	12.954	Continuing
Technical Evaluations	Various	Multiple Activities : Redstone Arsenal, Alabama	-	-		2.013	Nov 2023	-		-		-	0.000	2.013	Continuing
Subtotal			-	4.446		5.763		4.758		-		4.758	0.000	14.967	N/A
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
LRPM Other Government Agency	MIPR	CCDC Redstone Arsenal, AL : Various	-	5.534	Nov 2022	2.724	Nov 2023	4.887	Nov 2024	-		4.887	0.000	13.145	Continuing
System Development Maturation, Prototypes, and Integration	C/TBD	Multiple : Multiple	-	-		31.865	Mar 2024	34.145	Jan 2025	-		34.145	0.000	66.010	Continuing
Engineering and Technical Support	Various	Various : Redstone Arsenal, Alabama	-	2.801	Jan 2023	3.341	Jan 2024	2.952	Jan 2025	-		2.952	0.000	9.094	Continuing
Subtotal			-	8.335		37.930		41.984		-		41.984	0.000	88.249	N/A
Project Cost Totals			-	12.781		43.693		46.742		-		46.742	0.000	103.216	N/A
Remarks															
System Development Maturation, Prototypes, and Integration funding will obligate onto the Other Transaction Authority (OTA) agreement(s) to be awarded 4Q FY 2024. Additional funding will be obligated onto the contract in FY 2025.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) CD8 / <i>Long Range Precision Munition (LRPM)</i>	

Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029							
	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				
Capability Demonstration	█																															
Acquisition and Contract Preparation	█																															
System Development, Maturation, Prototypes, and Integration					█																											
Contract Award FY 2024					▲ 1																											
Contract Award FY 2025									▲ 2																							
Design Review													▲ 3																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) CD8 / <i>Long Range Precision Munition (LRPM)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Capability Demonstration	1	2022	1	2023
Acquisition and Contract Preparation	1	2022	2	2024
System Development, Maturation, Prototypes, and Integration	2	2024	1	2031
Contract Award FY 2024	4	2024	4	2024
Contract Award FY 2025	2	2025	2	2025
Design Review	2	2026	2	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army										Date: March 2024		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603639A / Tank and Medium Caliber Ammunition				Project (Number/Name) EC3 / Ammunition Logistics Prototyping			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EC3: Ammunition Logistics Prototyping	-	1.772	1.892	1.935	-	1.935	1.936	1.956	1.977	1.997	0.000	13.465
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project supports the future force by improving the distribution, management, reliability, and survivability of ammunition through the advanced development, integration, and demonstration of logistics system enablers supporting the Design of Army 2040. These enablers will improve the efficiency and effectiveness of ammunition operations, to include retrograde, while reducing the logistics footprint on the battlefield. Technology areas addressed include handling, distribution, and management (strategic and tactical), prognostics, diagnostics, and asset visibility, explosives safety, and autonomous friendly packaging and palletization. The efficient deployment and sustainment of reliable ammunition is vital to success on the battlefield. This Project enhances the operational effectiveness of the ammunition logistics system to ensure the distribution of reliable ammunition to the warfighter. Fiscal Year (FY) 2025 funding will be used to further mature munition health monitoring devices in accordance with the needs of the relevant PMs. Funding will be used to directly to support Contested Logistics and Long Range Precision Fire (LRPF) Cross Functional Teams (CFT) munition asset visibility and health monitoring requirements throughout the ammunition supply chain and resupply process. Specifically, the funding will be used to address improvements to the ammunition supply chain within the maneuver force.

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

	FY 2023	FY 2024	FY 2025
Title: Munitions Health and Inventory Monitoring Systems	0.919	0.992	1.535
<p>Description: Performance and reliability of certain munitions can be degraded by the environmental exposure history they experience during their lifetime. This Project will develop simple to complex environmental health and inventory monitoring/tracking systems to improve reliability and asset visibility and enable effective Condition Based Management for Ammunition. All research and development initiatives will be supporting the Contested Logistics, LRPF, Next Generation Combat Vehicle (NGCV), and Solider Lethality (SL) CFTs and the Multi-Domain Operations (MDO) modernization objectives that consume, store, and transport/distribute munitions and munition components in the maneuver formations as part of the overall predictive logistics concept.</p> <p>FY 2024 Plans: Develop and mature prototype systems to monitor munition environmental exposure beginning as ammunition is issued from the Ammunition Storage Areas and handed off to the sustainment formations. Develop a system architecture that can efficiently collect environmental exposure to temperature, humidity, shock, and vibration while simultaneously correlating these parameters to ballistic performance. The first iteration of these prototypes will be supporting large caliber projectiles, associated propellant, fuzes, and any other ammunition components. As the packaging of long-range precision ammunition items for tactical transportation and distribution configurations evolve through modernization, surveillance reporting of environmental exposure</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) EC3 / <i>Ammunition Logistics Prototyping</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>will become critical to ensure lethality and readiness. Integrate these prototype systems with other ammunition management technologies and leverage existing Systems of Record such as the Command Post Computing Environment, Joint Battle Command - Platform, Paladin Digital Fire Control System, and Advanced Field Artillery Tactical Data System.</p> <p>FY 2025 Plans: Develop and mature prototype munitions monitoring systems to track inventory within the maneuver formations to ensure ammunition posture is synchronized with the battlefield commander's intent. Key prototype attributes are precise ground truth of all ammunition issued from the Ammunition Storage Areas and handed off to the sustainment formations, monitor munition environmental exposure, and system architecture that maintains all relevant information within the associated data fabric. Information collected such as temperature, humidity, shock, and vibration will be used to adjust the ballistic kernel parameters to improve Control Entry Point (CEP) for any future fire mission. One or more Soldier touch points will be staged to evaluate early prototypes to assess maneuver performance improvements in support of projectiles, associated propellant, fuzes, and any other ammunition components. As the prototypes are evaluated, integration plans will be developed with other ammunition management technologies leveraging existing Systems of Record such as the Command Post Computing Environment, Joint Battle Command - Platform, Paladin Digital Fire Control System, and Advanced Field Artillery Tactical Data System.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Increase due to resourcing emerging requirements as determined by the Cross Functional Teams (CFTs).</p>				
<p>Title: Munitions Containerization Systems</p> <p>Description: For each family of munitions containers, optimize prototype container systems for automation compatibility, combat unit load quantity, sustainability/recyclability, explosives safety, environmental protection, load reconfiguration, unitization, and standardized interfaces. This will improve ammunition distribution efficiency while minimizing environmental and operational impacts.</p> <p>FY 2024 Plans: Develop and test series of prototype ammunition consolidators suitable for providing protection to class V items as they are transported by tactical wheeled vehicle organic to the sustainment formations and handed off to the ammo section within the Fires formations. All consolidators must be compliant with the environmental sensor prototype under concurrent development elsewhere within the JPEO A&A portfolio, and incorporate automation friendly features. Prototype consolidator concepts will supplement potential inner-packaging components and stress low cost, lightweight and interoperability with future manual and automated weapon and sustainment systems with ammunition items under development by PM CAS as the primary goal.</p> <p>FY 2025 Plans: Develop and mature a prototype ammunition consolidator selected through an early Soldier touch point suitable for providing protection to all field artillery ammunition items as they are transported by tactical wheeled vehicle organic to the Forward</p>		0.853	0.900	0.400

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) EC3 / <i>Ammunition Logistics Prototyping</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
Support Company and Ammunition Sections within the maneuver formations. The selected consolidator will be compliant with the emerging inventory/environmental sensor concepts under development elsewhere within the JPEO A&A portfolio and incorporate automation friendly features. Prototype consolidator concepts will supplement potential inner-packaging components and stress low cost, lightweight and interoperability with future manual and automated weapon and sustainment systems with ammunition items under development by PMs as the primary goal.			
<i>FY 2024 to FY 2025 Increase/Decrease Statement:</i> Decrease due to realigning funds to emerging requirements as determined by the Cross Functional Teams (CFTs).			
Accomplishments/Planned Programs Subtotals	1.772	1.892	1.935

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

N/A

Remarks

D. Acquisition Strategy

Fiscal Year (FY) 2023 funding will be used to further mature munition health monitoring devices in accordance with the needs of the relevant PMs. However, the preponderance of the funding will be used to directly to support Long Range Precision Fire (LRPF) munition health monitoring requirements throughout its resupply process. Specifically, the funding will be used to address munition health monitoring and packaging/preservation of munitions within the tactical movement of large caliber ammunition.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army **Date:** March 2024

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / Tank and Medium Caliber Ammunition	Project (Number/Name) EC3 / Ammunition Logistics Prototyping
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Advanced Munitions Health Monitoring System (CAT)	C/FFP	Cybernet : Ann Arbor, MI	-	0.267	Jan 2023	0.470	Jan 2024	0.265	Jan 2024	-		0.265	0.000	1.002	-
Advanced Munitions Health Monitoring System (PLS)	TBD	CR Tactical : Pittsburgh, PA	-	-		0.462	Jan 2024	0.270	Jan 2024	-		0.270	0.000	0.732	-
Tactical Munitions Health Monitoring System	C/FFP	Cybernet : Ann Arbor, MI	1.828	0.275	Jan 2022	-		-		-		-	0.000	2.103	-
Large Caliber Automation Friendly Packaging	TBD	TBD : TBD	-	0.433	Mar 2023	-		-		-		-	0.000	0.433	-
Lightweight Steel Container	TBD	SAVIT : Rockaway, NJ	-	-		0.300	Nov 2023	-		-		-	0.000	0.300	-
Advanced Munitions Inventory Tracking	TBD	TBD : TBD	-	-		-		0.700	Nov 2024	-		0.700	0.000	0.700	-
Subtotal			1.828	0.975		1.232		1.235		-		1.235	0.000	5.270	N/A

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
DEVCOM Armaments Center	MIPR	Picatinny Arsenal : NJ	6.203	0.597	Nov 2021	0.660	Nov 2023	0.700	Nov 2023	-		0.700	0.000	8.160	-
Subtotal			6.203	0.597		0.660		0.700		-		0.700	0.000	8.160	N/A

Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Test and Evaluation	MIPR	TBD : TBD	0.350	0.200	Mar 2023	-		-		-		-	0.000	0.550	-
Subtotal			0.350	0.200		-		-		-		-	0.000	0.550	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) EC3 / <i>Ammunition Logistics Prototyping</i>

Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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
Tactical Munitions Health Monitoring System	[Redacted]				[Redacted]																							
	Tactical Munitions Health Monitoring System																											
Large Caliber Automation Friendly Packaging	[Redacted]				[Redacted]																							
	Large Caliber Automation Friendly Packaging																											
Advanced Munitions Health Monitoring System (CAT)	[Redacted]				[Redacted]				[Redacted]																			
					Advanced Munitions Health Monitoring System (CAT)																							
Advanced Munitions Health Monitoring System (PLS)	[Redacted]				[Redacted]				[Redacted]																			
					Advanced Munitions Health Monitoring System (PLS)																							
Lightweight Steel Container	[Redacted]				[Redacted]				[Redacted]																			
					Lightweight Steel Container																							
Advanced Munitions Inventory Tracking	[Redacted]				[Redacted]				[Redacted]				[Redacted]															
									Advanced Munitions Inventory Tracking																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) EC3 / <i>Ammunition Logistics Prototyping</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Advanced Concept Development-Munitions Containerization-1A	1	2020	4	2021
Advanced Concept Development-Munitions Health Monitoring-3	3	2017	4	2020
Tactical Munitions Health Monitoring System	1	2022	4	2024
Large Caliber Automation Friendly Packaging	1	2023	4	2025
Advanced Munitions Health Monitoring System (CAT)	2	2024	2	2026
Advanced Munitions Health Monitoring System (PLS)	2	2024	2	2026
Lightweight Steel Container	1	2024	1	2026
Advanced Munitions Inventory Tracking	1	2025	4	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army										Date: March 2024		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603639A / Tank and Medium Caliber Ammunition				Project (Number/Name) FA5 / Assured Precision Weapons and Munitions			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
FA5: Assured Precision Weapons and Munitions	-	35.056	45.738	48.096	-	48.096	41.680	42.119	42.589	43.014	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Assured Precision Weapons and Munitions (APWM) - FA5 Project is focused on advanced risk mitigation, technology integration, prototyping, and product support to identify, evaluate, mature, test, and demonstrate various assured precision prototype technologies in Weapon and Munitions (W&M) components and subsystems within a complex System-of-Systems (SoS) environment. The APWM Project reinforces the National Defense Strategy's (NDS) major lines of effort through technology development and prototyping, which increases lethality and ensures future combat overmatch success of the Joint Force against peer/near-peer adversaries. This Project also aims to improve program performance and affordability for multiple W&M Programs of Record (PoRs) via Joint Lethality Positioning, Navigation and Timing (PNT), Navigation Warfare (NavWar), and Army M-Code Global Positioning System (GPS) coordinated efforts. The APWM Project directly supports the top Army Modernization Priorities via the Assured PNT (APNT) and Long Range Precision Fires (LRPF) imperatives in support of the NDS and multiple Public Law related Congressional imperatives. Funding will support engagement by W&M PNT experts in the development, evaluation, and technology delivery activities of the US Space Force's (USSF) M-Code GPS, Army's PNT related programs, and APNT/Space Cross Functional Team (CFT) programs in support of LRPF and Counter Anti-Access/Area Denial (A2/AD) missions. Funding will also enable component and subsystem architecture input essential for Precision W&M operating in a NavWar SoS environment, Army M-Code GPS technology integration and evaluation, planning and evaluating next generation M-Code GPS to validate capability for future Joint precision munitions, and maturation of alternative PNT and NavWar related technologies and solutions to enable informed APNT related PoR milestone and Army cross-functional modernization decisions.

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

	FY 2023	FY 2024	FY 2025
Title: APWM Integrated Product Support - Joint Lethality PNT and Navigation Warfare (NavWar) SME Working Integrated Product Team (WIPT) & Program Management	3.744	3.848	4.089
Description: Provide APWM technical subject matter expertise and support to the Joint oversight board for APWM. Provide overall APWM Project Program Management support.			
FY 2024 Plans: Provides overall Project Program Management support for 643639A-FA5. The JL SMEs will continue to provide technical expertise and support to the Joint oversight board for Assured Precision Weapons and Munitions by coordinating with and supporting the development and technology delivery activities of the Joint Weapons and Munitions community, to include PNT modernization and NavWar related programs, participation in design reviews, evaluation and formal feedback on technology and systems requirements and performance, component and subsystem architecture input essential for precision weapons and munitions operating in a Joint SoS multi-domain environment. Specific support focus includes requirements and virtual prototyping			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FA5 / <i>Assured Precision Weapons and Munitions</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
for MGUE Increment 2, resilient and survivable PNT technology maturation, NavWar dependencies, and direct participation in new technology areas such as PGM Software Defined Receivers. FY 2025 Plans: Provides overall Project Program Management support for 643639A-FA5. The JL SMEs will continue to provide technical expertise and support to the Joint oversight board for APWM by coordinating with and supporting the development and technology delivery activities of the Joint W&M community, to include PNT modernization and NavWar related programs, participation in design reviews, evaluation and formal feedback on technology and systems requirements and performance, component and subsystem architecture input essential for precision W&M operating in a Joint SoS multi-domain environment. Specific support focus includes prototyping and evaluation planning for Military GPS User Equipment (MGUE) Increment 2 (Inc2), resilient and survivable PNT technology maturation and Joint Fires standardization, NavWar dependencies and Joint proposed NavWar prototyping initiatives, and direct participation in new technology areas, such as PGM Software Defined Receivers (SDRx). FY 2024 to FY 2025 Increase/Decrease Statement: Level of effort slightly increased from FY24 to FY25 due to the ongoing APNT/S CFT and USSFs MGUE program efforts, maturing NavWar initiatives, and increasing complexity of Multi-Domain Operations (MDOs) impacting collaborative efforts and increased stakeholder participation for the JL community.				
Title: Next Generation PNT Technologies Phase 1 Description: Continue prototyping APNT technologies to provide the next generation of APNT capability to W&Ms in a highly complex and fast paced battlefield. Will leverage prior Army Science & Technology (S&T), previous integrated demonstration events, information on threat advancement, and lessons learned to rapidly develop, integrate, prototype, and transition critical APNT technologies to W&Ms directly supporting LRPF and Air & Missile Defense initiatives.		2.268	-	-
Title: Assured PNT related Weapons & Munitions Prototyping - PGM Software-Defined Receiver (SDRx) Description: Develop a prototype "All In One" GPS, Global Navigation Satellite System (GNSS), Alternative Navigation (AltNav), Signals of Opportunity (SoO)) software defined radio frequency APNT receiver for a large portion of the PGM portfolio.		5.329	-	-
Title: Army APNT (incl M-Code) and NavWar Technology Integration and Evaluation Description: Provide technical assessment, coordination, and engineering support related to the development, prototyping, integration, and evaluation of USSF's MGUE technology deliverables across all Army W&Ms, including participation in design reviews, testing, evaluation, and formal feedback on technology, component-level, card-level, sub-system-level, and systems-level requirements and performance. Reduce risk, support, and inform M-Code GPS related Army cross-functional modernization decisions for W&M operating in a peer/near threat SoS environment, as well as identifying complementary PNT and NavWar related solutions when M-Code GPS is not solely sufficient to enable Combat Overmatch. Directly addresses PL 111-383 aka		12.420	11.902	13.357

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FA5 / <i>Assured Precision Weapons and Munitions</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>FY11 National Defense Authorization Act (NDAA) Section 913: Jan 11 (M-Code Mandate), PL 115-232 aka FY19 NDAA Section 1609: Aug 18 (MGUE Inc2 must support Galileo and QZSS), DODI 4650.08: Dec 18 (DoD NavWar Compliance), MGUE Inc2 Precision Guided Munition (PGM) Technical Requirements Document (TRD): Oct 19, Alternative Navigation (AltNav) Directed Requirement (DR): Nov 19, FY21 NDAA Section 1611 (Resilient and Survivable PNT), NavWar Situational Awareness (SA) Army Capability Development Document (A-CDD) approved Mar 21, NavWar Electronic Attack (EA) A-CDD approved Sep 22).</p> <p>FY 2024 Plans: Continues to support design reviews, experimentation, prototyping, testing, evaluation, and risk reduction of Army M-Code Inc2, AltNav, and NavWar by in-house government activities and OTA/IDIQ Contract efforts. Maintains an Army APNT and NavWar Weapons and Munitions IPT working directly with the APNT/S CFT and multiple PEOs. Facilitate weapon and munition APNT and NavWar experimentation in PNTAX and Project Convergence type events to inform CONOPS and requirement generation processes.</p> <p>FY 2025 Plans: Continue to support design reviews, experimentation, prototyping, testing, evaluation, and risk reduction of Army M-Code Inc2, AltNav, and NavWar by in-house Government activities and Other Transaction Authority (OTA) / Indefinite Delivery/Indefinite Quantity (IDIQ) contract efforts. Maintains an Army APNT and NavWar W&Ms IPT working directly with the APNT/S CFT, multiple Program Executive Offices, and Army Capability Managers. Facilitate W&M APNT and NavWar experimentation in PNT Assessment (PNTAX) and Capstone type events to inform Concept of Operations (CONOPS) and requirement generation processes.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Level of effort required in FY25 is similar to FY24. Army APNT and NavWar Technology Integration Evaluation increases slightly due to anticipated updates in requirements documentation for APNT and NavWar.</p>				
<p>Title: MGUE Inc2 for JROC-directed PGM Lead Platform</p> <p>Description: Influence Next Gen MGUE development to ensure PGM needs and requirements are met with the USSF Next Gen MGUE. Evaluate the Next Gen MGUE using the DoD-selected representative Joint precision munition to verify and validate PGM needs and requirements are met by Next Gen MGUE. Directly addresses PL 111-383 aka FY11 NDAA Section 913: Jan 11 (M-Code Mandate), PL 115-232 aka FY19 NDAA Section 1609: Aug 18 (MGUE Inc2 must support Galileo and QZSS), DODI 4650.08: Dec 18 (DOD NavWar Compliance), MGUE Inc2 PGM TRD: Oct 19, AltNav DR: Nov 19, FY21 NDAA Section 1611 (Resilient and Survivable PNT).</p> <p>FY 2024 Plans:</p>		11.295	17.030	19.336

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FA5 / <i>Assured Precision Weapons and Munitions</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>Work directly with USSF and M-Code Inc2 GPS prime vendors to mature PGM specific design trade studies leading to a completed virtual prototype. Begin PGM M-Code Inc2 Circuit Card Assembly (CCA) designs with PGM specific software development reducing risk to accept USSF ASIC prototypes. Virtually prototype JROC-directed representative PGM Lead Platform design modifications to accept USSF M-Code Inc2 prototype technology for next generation ASIC verification and validation ensuring PGM PNT-related needs and requirements are met by MGUE Inc2.</p> <p>FY 2025 Plans: Work directly with USSF and M-Code Inc2 GPS prime vendors to prototype PGM firmware and software solutions for the Inc2 ASIC and ancillary supporting electronics. Begin PGM M-Code Inc2 Application Specific Integrated Circuit (ASIC) integration onto CCAs. Continue virtually prototyping Joint Requirements Oversight Council (JROC) -directed representative PGM Lead Platform design modifications to accept USSF M-Code Inc2 prototype technology for Next Gen ASIC verification and validation ensuring PGM PNT-related needs and requirements are met by MGUE Inc2. Begin detailed verification and validation planning with the Joint Fires stakeholder community and USSF.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increases in FY25 due to level of effort increasing to perform prototyping and develop evaluation plans across multiple levels of integration. Prototyping will be executed across the ASIC, CCA, guidance navigation and control unit, JROC-directed representative PGM Lead Platform, and supporting Fire Command and Control (C2) systems to reduce risk of accepting USSF M-Code Inc2 technology to verify and validate Joint Fires Requirements.</p>				
<p>Title: Next Generation NavWar Tech Phase 1</p> <p>Description: Continue prototyping NavWar technologies across W&Ms needed to continue to dominate the PNT battlespace. Will leverage prior Army and Joint Services S&T, previous integrated demonstration events, information on threat and adversary PNT advancement, and lessons learned to rapidly develop, integrate, prototype, and transition critical NavWar technologies. Prototyping will transition to new Fuze Setter functions, Munition Deployed NavWar upgrades, and hardening of APNT systems to counter new threats, and control adversaries PNT access.</p> <p>FY 2024 Plans: Continue prototyping NavWar attack, sense, and countermeasure technologies to preserve weapon and munition access to PNT, while dominating adversary access to PNT. Phase 1 technologies will advance data collect and use of NavWar situational awareness for Fires to enhance lethality and ensure effects on target(s) in complex threat environments.</p> <p>FY 2025 Plans:</p>		-	3.358	1.339

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FA5 / <i>Assured Precision Weapons and Munitions</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>Complete and evaluate NavWar attack, sense, countermeasure, and SA technologies through controlled experiments to inform component prototyping of integrated dual mode multi-mission payloads and associated Fires C2 application prototyping.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Next Gen NavWar Tech Phase 1 continues to mature and prototype NavWar technology from Fires SoS APNT related anti-spoof, NavWar and Next Gen PNT Technologies Phase 1, while transitioning new S&T technology capabilities from Combat Capabilities Development Command (CCDC) Armaments Center (AC), Aviation and Missile Center (AvMC), and Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissanc (C5ISR). Funding decrease due to transition of multiple mature technologies into physical component prototyping for Munition Deployed NavWar (MDN) Dual Mode Attack/Sense Phase 1 and virtual prototyping of Network Assisted Assured PNT (NA2) and NavWar SoS automation solutions.</p>				
<p>Title: PGM Software Defined Receiver (SDRx) Phase II</p> <p>Description: Use PGM SDRx Phase I results to complete a prototype "All In One " APNT (GPS, GNSS, AltNav, SoO), SDRx for a large SWAP PGMs that is ready to transition to Army Fires PoRs, directly addressing the FY21 NDAA Section 1611 Congressional mandate for resilient and survivable PNT.</p> <p>FY 2024 Plans: Use results of PGM SDRx Phase I prototyping to develop physical prototypes for use in experimentations and evaluations of technology capabilities. Formalize USSF security certification target to reduce risk of obtaining a security certified PGM SDRx capable of M-Code GPS using Commercial-off-the-Shelf (COTS) components.</p> <p>FY 2025 Plans: Complete PGM SDRx functional prototype to demonstrate intent of FY21 NDAA Section 1611 Congressional mandate for resilient and survivable PNT. Integrate physical PGM SDRx prototype into a representative large SWAP PGM to demonstrate critical "All in One" software defined navigation capabilities in a live fire event. Provide test reports to Fires PoRs to inform transition of PGM SDRx. Transition PGM SDRx prototype to Fires NavWar for prototyping expanded NavWar mission capability and future software upgrades to Fires PoRs adopting navigation software defined solutions.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding decreased from prior year due to transition of focus from physical and functional prototyping, to integration and demonstration of the PGM SDRx requiring less resources.</p>		-	9.600	7.400
<p>Title: Munition Deployed NavWar Dual Mode Attack/Sense Phase 1</p> <p>Description: Transition Next Gen NavWar technology to component prototyping of multi-mode NavWar active and passive common Rocket/Missile and Cannon Artillery Cargo payloads. Prototype solutions focus on active battlespace shaping and sensing for force multiplying effects. Initiative will provide high Technology Readiness Level (TRL) component solutions for</p>		-	-	1.375

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FA5 / <i>Assured Precision Weapons and Munitions</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>integrated multi-mission attack and sense payload designs supporting an array for Fires Multi-Domain Operations across the electronic warfare spectrum. Directly addresses NavWar SA A-CDD approved Mar 21, NavWar Electronic Attack (EA) A-CDD approved Sep 22.</p> <p>FY 2025 Plans: Physical component prototyping and operational like experimentation planning of Next Gen NavWar Technology to include Software Defined Radio and Radio Frequency Smoke attack and sense payloads.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Increase needed in FY25 to accept transition of mature technologies for physical component prototyping of common dual mode Attack/Sense common NavWar payloads across Rocket/Missile and Cannon Cargo Artillery.</p>				
<p>Title: Network Assisted Assured PNT and NavWar Phase 1</p> <p>Description: Prototype Virtual Fires SoS APNT and NavWar solutions to facilitate automation of Next Gen APNT Phase 1 and Next Gen NavWar Phase 1 technologies across the W&M Portfolio. Prototyping efforts will focus on enabling combat lethality overmatch in PNT challenged environments for Cannon and Rocket/Missile core missions. Continue to identify and define the future Fires SoS MDO interdependencies to enable a suite of NavWar operational capabilities and develop near, mid, and long-term MDO Fires and NavWar strategies to meet Army modernization imperatives. Directly addresses PL 111-383 aka FY11 NDAA Section 913: Jan 11 (M-Code Mandate), PL 115-232 aka FY19 NDAA Section 1609: Aug 18 (MGUE Inc2 must support Galileo and QZSS), DODI 4650.08: Dec 18 (DOD NavWar Compliance), MGUE Inc2 PGM TRD: Oct 19, AltNav DR: Nov 19, FY21 NDAA Section 1611 (Resilient and Survivable PNT).</p> <p>FY 2025 Plans: Initiate virtual prototyping across Fires SoS needed to automate use of Next Gen APNT Phase 1 and Next Gen NavWar Phase 1 technologies. Prototyping will focus on the following areas: 1. Hot start and efficient use of multi-source PNT solutions for W&Ms. 2. Automating the translation of NavWar SA to situational understanding to reduce cognitive burden on operators meeting speed of battle demands in complex MDOs. Work with PoRs to integrate and implement NavWar information to support NavWar situational understanding and Fires decision support tools. 3. Dissemination of Hot Start data needed for collaborative swarming Fires seeker applications to avoid over-kill and maximize efficiency. Continue to identify, design and architect future SoS Fires interdependencies for a more integrated NavWar operational functionality.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increase needed in FY25 to transition Next Gen APNT Phase 1 and Next Gen NavWar Phase 1 technologies for virtual prototyping of SoS solutions needed to automate use of multi-source PNT, collaborative and efficient use of seekers in swarming</p>		-	-	1.200

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army	Date: March 2024
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Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FA5 / <i>Assured Precision Weapons and Munitions</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
applications, and reducing cognitive burden of Fires Support coordinators in complex MDO environments to meet speed of battle demands.			
Accomplishments/Planned Programs Subtotals	35.056	45.738	48.096

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

N/A

Remarks

D. Acquisition Strategy

Acquisition Strategy: The APWM Project will utilize a combination of Other Transaction Authority (OTA) contract mechanisms such as the Defense Ordinance Technology Consortium (DOTC) OTA and In-House government development and engineering capabilities to obtain prototypes and demonstrate/evaluate the maturity and integration risk of the M-Code GPS on Precision W&M, as well as other alternative PNT and NavWar related capabilities and corresponding related prototype SoS solutions.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 4				PE 0603639A / Tank and Medium Caliber Ammunition				FA5 / Assured Precision Weapons and Munitions							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
Assured PNT related Munitions Integration Prototyping	MIPR	DoD Ordnance Technology Consortium (DOTC) - Various : Various	16.786	2.258	Dec 2022	-		-		-		-	0.000	19.044	-
Army APNT (incl M-Code) and NavWar Technology Integration and Evaluation	MIPR	Various : Various	19.822	9.900	Dec 2022	-		-		-		-	0.000	29.722	-
Weapon & Munitions Prototyping & Integration Risk Mitigation	MIPR	DoD Ordnance Technology Consortium (DOTC) - TBD; Various : Various	15.666	3.939	Dec 2022	-		-		-		-	0.000	19.605	-
MGUE Inc2 for JROC directed PGM Lead Platform Development	MIPR	DoD Ordnance Technology Consortium (DOTC) - Various : Various	-	8.689	Dec 2022	-		-		-		-	0.000	8.689	-
Fires APNT	Various	DoD Ordnance Technology Consortium (DOTC) - BAE, L3Harris, Raytheon, Northrop Grumman Mission Systems, General Dynamics Mission Systems; DEVCOM AC, CCDC Aviation and Missiles Center (AvMC): : Picatinny Arsenal NJ, Redstone Arsenal AL, Various	-	-		24.288	Dec 2023	25.308	Dec 2024	-		25.308	Continuing	Continuing	Continuing
Fires NavWar	Various	DoD Ordnance Technology Consortium (DOTC) - SRC, SAVIT TBD Competing,	-	-		4.532	Dec 2023	4.629	Dec 2024	-		4.629	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army **Date:** March 2024

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / Tank and Medium Caliber Ammunition	Project (Number/Name) FA5 / Assured Precision Weapons and Munitions
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
		(Industry Partner Subs) CCDC Communication Electronics Research, Development and Engineering Center (C5ISR) : Aberdeen Proving Ground MD; Various													
Fires Systems of Systems APNT and NavWar	Various	DoD Ordnance Technology Consortium (DOTC) - IS4S TBD competing; Various (Industry Partner Subs) : Various	-	-		4.533	Dec 2023	4.629	Dec 2024	-		4.629	Continuing	Continuing	Continuing
Subtotal			52.274	24.786		33.353		34.566		-		34.566	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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	Joint Program Executive Office Armaments and Ammunition (JPEO A&A) : Picatinny Arsenal, NJ	5.847	1.278	Dec 2022	-		-		-		-	0.000	7.125	-
Assured Precision Weapons and Munitions IPT Support	MIPR	Various : Various	10.864	2.466	Dec 2022	-		-		-		-	0.000	13.330	-
Army APNT (incl M-Code) and NavWar Technology Integration and Evaluation	MIPR	Various : Various	6.700	2.520	Dec 2022	-		-		-		-	0.000	9.220	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 4				PE 0603639A / Tank and Medium Caliber Ammunition				FA5 / Assured Precision Weapons and Munitions							
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
Support. (Multiple PEO Sup															
Assured Technologies Engineering Support	MIPR	DEVCOM : Picatinny Arsenal, NJ	6.296	1.000	Dec 2022	-		-		-		-	0.000	7.296	-
Assured Technologies Engineering Support	MIPR	Communication Electronics Research, Development and Engineering Center (C5ISR) : Aberdeen Proving Ground, MD	2.071	0.200	Dec 2022	-		-		-		-	0.000	2.271	-
Assured Technologies Engineering Support	MIPR	Aviation and Missiles Center (AvMC) : Redstone Arsenal, AL	0.200	0.200	Dec 2022	-		-		-		-	0.000	0.400	-
MGUE Inc2 for JROC-directed PGM Lead Platform Support	MIPR	Combat Capability Development Command Armament Center (CCDC AC) : Picatinny Arsenal, NJ	4.071	2.606	Dec 2022	-		-		-		-	0.000	6.677	-
Program Management and Integrated Product Support	Various	DEVCOM AC; CCDC AvMC; Joint Lethality PNT and NAVWAR IPT Members: APNT/S CFT, PEO M&S, AFLCMC (Eglin AFB), USSF, NAVSEA, NAVAIR, West Point, and Various : Picatinny Arsenal NJ, Redstone Arsenal AL, Various	-	-		3.848	Dec 2023	4.089	Dec 2024	-		4.089	Continuing	Continuing	Continuing
Fires APNT	Various	DEVCOM AC; CCDC AvMC; CCDC C5ISR :	-	-		6.070	Dec 2023	6.372	Dec 2024	-		6.372	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army											Date: March 2024				
Appropriation/Budget Activity 2040 / 4						R-1 Program Element (Number/Name) PE 0603639A / Tank and Medium Caliber Ammunition					Project (Number/Name) FA5 / Assured Precision Weapons and Munitions				

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
		Picatinny Arsenal NJ, Redstone Arsenal AL; Various													
Fires NavWar	Various	DEVCOM AC; CCDC AvMC; CCDC C5ISR : Picatinny Arsenal NJ, Redstone Arsenal AL; Various	-	-		1.334	Dec 2023	1.664	Dec 2024	-		1.664	Continuing	Continuing	Continuing
Fires Systems of Systems APNT and NavWar	Various	DEVCOM AC; CCDC AvMC; CCDC C5ISR : Picatinny Arsenal NJ, Redstone Arsenal AL; Various	-	-		1.133	Dec 2023	1.405	Dec 2024	-		1.405	Continuing	Continuing	Continuing
Subtotal			36.049	10.270		12.385		13.530		-		13.530	Continuing	Continuing	N/A

Remarks
Support consists of labor, travel and other non-labor costs in Fiscal Year (FY) 2022.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		88.323	35.056	45.738	48.096	-	48.096	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FA5 / <i>Assured Precision Weapons and Munitions</i>

Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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
Integrated Product Support - Joint Lethality PNT and Nav...	[Redacted]																											
Integrated Product Support - Program Management	[Redacted]																											
Fires APNT - Next Gen PNT Technologies Phase 1	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
Fires APNT - PGM Software Defined Receiver Phase 1	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
Fires APNT - MGUE Inc2 for JROC-directed PGM Lead Platform	[Redacted]																											
Fires APNT - PGM Software Defined Receiver Phase 2	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
Fires APNT - Next Gen PNT Technologies Phase 2	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
Fires APNT - Advanced multi-source PNT solutions for PW&...	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
Fires APNT - Army APNT (incl M-Code) and NavWar Tech Int...	[Redacted]																											
Fires NavWar - Next Gen NavWar Technologies Phase 1	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
Fires NavWar - MDN Dual Mode Attack/Sense Phase 1	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
Fires NavWar - MDN Countermeasures	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
Fires NavWar - MDN Dual Mode Attack/Sense Phase 2	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FA5 / <i>Assured Precision Weapons and Munitions</i>

Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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
Fires NavWar - Multi-mode/Multi-mission MDN																												
Fires NavWar - MDN Multi-Spectral Countermeasures Phase 1																												
Fires NavWar - Army APNT (incl M-Code) and NavWar Tech I...																												
Fires SoS - Army APNT (incl M-Code) and NavWar Tech Intg...																												
Fires SoS - Network Assisted Assured PNT and NavWar Phase 1																												
Fires SoS - Network Assisted Assured PNT and NavWar Phase 2																												
Fires SoS - Network Assisted Assured PNT and NavWar for ...																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FA5 / <i>Assured Precision Weapons and Munitions</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Integrated Product Support - Joint Lethality PNT and NavWar SME WIPT	1	2017	4	2033
Integrated Product Support - Program Management	1	2017	4	2033
Fires APNT - Next Gen PNT Technologies Phase 1	1	2022	4	2023
Fires APNT - PGM Software Defined Receiver Phase 1	1	2022	4	2023
Fires APNT - MGUE Inc2 for JROC-directed PGM Lead Platform	1	2022	4	2027
Fires APNT - PGM Software Defined Receiver Phase 2	1	2024	4	2025
Fires APNT - Next Gen PNT Technologies Phase 2	1	2027	4	2028
Fires APNT - Advanced multi-source PNT solutions for PW&M Phase 1	1	2029	4	2030
Fires APNT - Advanced multi-source PNT solutions for PW&M Phase 2	1	2031	4	2032
Fires APNT - Autonomous Integration of Multi-Source PNT for PW&M	1	2033	4	2033
Fires APNT - Army APNT (incl M-Code) and NavWar Tech Intg & Eval	1	2023	4	2033
Fires NavWar - Next Gen NavWar Technologies Phase 1	1	2024	4	2025
Fires NavWar - MDN Dual Mode Attack/Sense Phase 1	1	2025	4	2026
Fires NavWar - MDN Countermeasures	1	2026	4	2027
Fires NavWar - MDN Dual Mode Attack/Sense Phase 2	1	2027	4	2028
Fires NavWar - Multi-mode/Multi-mission MDN	1	2029	4	2030
Fires NavWar - MDN Multi-Spectral Countermeasures Phase 1	1	2029	4	2030
Fires NavWar - MDN Multi-Spectral Countermeasures Phase 2	1	2031	4	2032
Fires NavWar - Multi-Mode/Multi-Mission Munition Deployed Advanced NavWar	1	2031	4	2032
Fires NavWar - Integrated Passive and Active MDN	1	2033	4	2033
Fires NavWar - Army APNT (incl M-Code) and NavWar Tech Intg and Eval	1	2023	4	2033
Fires SoS - Army APNT (incl M-Code) and NavWar Tech Intg and Eval	1	2022	4	2033

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army **Date:** March 2024

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FA5 / <i>Assured Precision Weapons and Munitions</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Fires SoS - Network Assisted Assured PNT and NavWar Phase 1	1	2025	4	2026
Fires SoS - Network Assisted Assured PNT and NavWar Phase 2	1	2027	4	2028
Fires SoS - Network Assisted Assured PNT and NavWar for MDO Phase 1	1	2029	4	2030
Fires SoS - Network Assisted Assured PNT and NavWar for MDO Phase 2	1	2031	4	2032
Fires SoS - Automation of NavWar MDO across Fires SoS	1	2033	4	2033

Note

Notes:
 Positioning, Navigation and Timing (PNT)
 Subject Matter Expert (SME)
 Working Integrated Product Team (WIPT)
 Network Assisted (NA)
 Assured Positioning, Navigation and Timing (APNT)

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army										Date: March 2024		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603639A / Tank and Medium Caliber Ammunition				Project (Number/Name) FG1 / Cannon-Delivered Area Effects Munitions (C-DAEM)			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
FG1: Cannon-Delivered Area Effects Munitions (C-DAEM)	-	-	-	19.072	-	19.072	-	-	-	-	0.000	19.072
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Cannon-Delivered Area Effects Munitions (C-DAEM) is a new start within the Tank and Medium Caliber Ammunition program in FY 2025.

A. Mission Description and Budget Item Justification

The Cannon Delivered Area Effects Munitions (C-DAEM) Budget Activity Four (BA4) is a new start project in Fiscal Year 2025 (FY25). The XM1155 projectile, transitioning from Budget Activity Three (BA3) PE 0603464A / Long Range Precision Fires Advanced Technology Project BO8 Long Range Precision Fires Advanced Tech), will deliver lethality and range overmatch in 155mm artillery weapon systems at more than double the current range from legacy artillery cannons and will be compatible in future 155MM artillery systems in a Global Positioning System (GPS) degraded and denied environments. The XM1155 projectile, developed as part of an organic Long Range Precision Fires capability, will provide overmatching cannon artillery range capability at both Tactical and Operational Fires range by shaping the nature of the close fight through seeking moving and imprecisely located targets at extended ranges, will increase range capability of the current 39 caliber cannon fleet and will also be compatible with future 52 caliber and above artillery weapon systems. FY 2025 funding will support technology maturation and risk reduction of key system and subsystems, improvements in performance in difficult use cases, and integration of the tactical warhead and seeker culminating in a series of Design Verification Testing (DVT) to achieve Technology Readiness Level (TRL) six (6) maturity.

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

	FY 2023	FY 2024	FY 2025
Title: C-DAEM Extended Range	-	-	19.072
Description: C-DAEM Extended Range will deliver lethality and range overmatch in 155mm artillery weapon systems seeking moving and imprecisely located targets at extended ranges.			
FY 2025 Plans: Conduct System and subsystem DVT testing including guided flight testing at multiple levels of maturity and integration leading to a system level capabilities demonstration at TRL 6 in Fiscal Year 2026 (FY26).			
FY 2024 to FY 2025 Increase/Decrease Statement: The Cannon Delivered Area Effects Munitions (C-DAEM) Budget Activity Four (BA4) is a new start project in Fiscal Year 2025 (FY25).			
Accomplishments/Planned Programs Subtotals	-	-	19.072

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FG1 / <i>Cannon-Delivered Area Effects Munitions (C-DAEM)</i>

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

N/A

Remarks

D. Acquisition Strategy



The XM1155 development program will utilize an existing Other Transaction Authority (OTA) contracting vehicle to execute design, development, and qualification efforts. Currently three contractors have candidate technical solutions which are completing demonstration activities leading to a Technology Readiness Level (TRL) six (6). This contracting vehicle will allow a down select between the technical candidates and ensure completion of the demonstration of the candidate technical solution in Fiscal Year 2026 (FY26).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 4				PE 0603639A / Tank and Medium Caliber Ammunition				FG1 / Cannon-Delivered Area Effects Munitions (C-DAEM)							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
OTA - Extended Range Technology Maturation and Risk Reduction (TMRR)	MIPR	Other Transaction Authority (OTA) Contract : Picatinny Arsenal, NJ	-	-		-		16.000	Mar 2025	-		16.000	0.000	16.000	-
Subtotal			-	-		-		16.000		-		16.000	0.000	16.000	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
Engineering Support	MIPR	Combat Capabilities Development Command Armaments Center (DEVCOM AC) : Picatinny Arsenal, NJ	-	-		-		2.500	Oct 2024	-		2.500	0.000	2.500	-
Subtotal			-	-		-		2.500		-		2.500	0.000	2.500	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
Extended Range Testing	MIPR	Army Test & Evaluation Command (ATEC) : Yuma, AZ	-	-		-		0.572	Sep 2025	-		0.572	0.000	0.572	-
Subtotal			-	-		-		0.572		-		0.572	0.000	0.572	N/A
Project Cost Totals			-	-		-		19.072		-		19.072	0.000	19.072	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FG1 / <i>Cannon-Delivered Area Effects Munitions (C-DAEM)</i>	

Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029											
	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								
C-DAEM ER Development TMRR Phase																																				
ER Development DOTC Contract																																				
ER Preliminary Design Review (PDR)																					 PDR															
ER Competitive Demonstration																					 Demo															

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) FG1 / <i>Cannon-Delivered Area Effects Munitions (C-DAEM)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
C-DAEM ER Development TMRR Phase	1	2025	4	2026
ER Development DOTC Contract	1	2025	4	2026
ER Preliminary Design Review (PDR)	1	2026	1	2026
ER Competitive Demonstration	3	2026	4	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army **Date:** March 2024

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / Tank and Medium Caliber Ammunition	Project (Number/Name) XT5 / 30mm Anti-Personnel and Counter UAS
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
XT5: 30mm Anti-Personnel and Counter UAS	-	-	-	0.182	-	0.182	3.686	3.119	-	-	0.000	6.987
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

30mm Anti-Personnel and Counter UAS is a new start within the Tank and Medium Caliber Ammunition program in FY 2025.

A. Mission Description and Budget Item Justification

Airburst capability is identified as a threshold Key System Attribute (KSA) in Apache Block 3 Capability Production Document (CPD) - Approved 14 June 2017 and other cannon caliber Operational Needs Statements (ONS) and Capability Development Documents (CDD). The Anti-Personnel and Counter Unmanned Aerial Systems (UAS) munition provides increased lethality through airburst effects against personnel, small boats, and small Unmanned Aerial Systems (UAS) without requiring modification to the platform. Fiscal Year (FY) 2025 funds support developing performance specifications and contract preparation to begin development and testing.

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

	FY 2023	FY 2024	FY 2025
Title: Anti-Personnel and Counter UAS	-	-	0.182
Description: Develop, demonstrate, and qualify the High Explosive Proximity munition for anti-personnel and counter UAS missions.			
FY 2025 Plans: Develop performance specifications, statement of work, and prepare contract vehicle for FY 2026 development award.			
FY 2024 to FY 2025 Increase/Decrease Statement: Program is a new start in FY 2025.			
Accomplishments/Planned Programs Subtotals	-	-	0.182

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

N/A

Remarks

D. Acquisition Strategy

Proposals will be requested from Industry to develop High Explosive Proximity (HEP) tactical cartridges that will meet Army Performance Specifications for anti-personnel and Counter UAS. The Government will award an Other Transaction Agreement (OTA) contract to support development and testing for the fielding of the HEP ammunition, with an option to award low-rate manufacturing.

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / Tank and Medium Caliber Ammunition	Project (Number/Name) XT5 / 30mm Anti-Personnel and Counter UAS

Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029				
	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	
Performance Specification Development and Contract Prepa...									P Spec Dev and Contract Prep																				
Contract Award																	▲ 1 Contract Award												
Engineering Development																	Engineering Development												
Safety Confirmation Testing																					Safety Confirmation Testing								
Urgent Materiel Release (UMR)																									▲ 2 UMR				
Low-Rate Initial Production																									LRIP				

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603639A / <i>Tank and Medium Caliber Ammunition</i>	Project (Number/Name) XT5 / <i>30mm Anti-Personnel and Counter UAS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Performance Specification Development and Contract Preparation	1	2025	1	2026
Contract Award	2	2026	2	2026
Engineering Development	2	2026	4	2027
Safety Confirmation Testing	2	2027	4	2027
Urgent Materiel Release (UMR)	1	2028	1	2028
Low-Rate Initial Production	1	2028	4	2028