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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 3: Advanced Technology Development (ATD)	R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	138.482	202.830	153.024	-	153.024	127.982	131.428	119.292	119.789	0.000	992.827
AE8: Land-Based Anti-Ship Missile (LBASM) Advanced Tech	-	15.125	12.150	-	-	-	-	-	-	-	0.000	27.275
AF2: Long Range Maneuverable Fires (LRMF) Advanced Tech	-	-	4.663	62.661	-	62.661	50.970	50.126	1.311	1.658	0.000	171.389
AG3: Extended Range Cannon Artillery (ERCA) Adv Tech	-	3.003	3.354	-	-	-	6.480	9.418	11.309	11.432	0.000	44.996
AG5: Extended Range Artillery Munition Suite Adv Tech	-	32.594	27.461	23.484	-	23.484	9.726	-	10.197	8.243	0.000	111.705
AG7: Energetic Materials and Adv Processing Adv Tech	-	2.020	1.954	-	-	-	-	-	-	-	0.000	3.974
BO8: Long Range Precision Fires Advanced Tech (CA)	-	48.000	102.000	-	-	-	-	-	-	-	0.000	150.000
BY2: Advanced Hypersonic Technology	-	37.740	36.517	64.136	-	64.136	49.592	50.808	50.835	51.633	0.000	341.261
CE9: Armaments Advanced Technology*	-	-	-	-	-	-	8.406	10.844	12.362	13.516	0.000	45.128
CZ8: PrSM Modular Payload Advanced Development	-	-	14.731	2.743	-	2.743	2.808	10.232	33.278	33.307	0.000	97.099

*This project's R-2a exhibit has been suppressed due to funding not beginning until after FY 2024

A. Mission Description and Budget Item Justification

This Program Element (PE) matures and demonstrates Long Range Precision Fires (LRPF) technologies to destroy, neutralize, or suppress the enemy by cannon artillery and missile fire and enable integration of fire support assets into combined arms operations. Major Focus Areas for LRPF Science and Technology include: Missiles, Cannon Artillery, and Supporting LRPF Technologies covering Strategic, Operational and Tactical Lines of Effort. LRPF Missiles Advanced Development matures and demonstrates a broad range of Missile technologies to enhance Army integrated LRPF capabilities at extended range. Cannon Artillery Advanced Development matures and demonstrates critical technologies to increase range, precision, and both point and area effects for cannon artillery. Supporting LRPF Technologies Advanced Development matures and demonstrates a broad range of component technologies to address weapon cost drivers and enhance performance of future LRPF munitions and systems.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603464A / <i>Long Range Precision Fires Advanced Technology</i>
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Research in this Program Element (PE) complements PE 0602147A Long Range Precision Fires Technology.

This PE is directly aligned to the Army Long Range Precision Fires (LRPF) Modernization Priority.

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Research is performed by the United States Army Futures Command (AFC).

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	141.909	100.830	133.252	-	133.252
Current President's Budget	138.482	202.830	153.024	-	153.024
Total Adjustments	-3.427	102.000	19.772	-	19.772
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	102.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.427	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	19.772	-	19.772

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

Project: BO8: *Long Range Precision Fires Advanced Tech (CA)*

Congressional Add: *Program Increase - Hypervelocity Projectile Extended Range*

Congressional Add: *Extended Range Artillery Munitions Suite*

Congressional Add: *Program Increase - Maneuvering Submunitions for Precision Strike Missile*

Congressional Add: *Program Increase - AFT COMBUSTOR RAMJET PROPULSION*

Congressional Add: *Program Increase - DEVELOPMENT AND TESTING OF PROPELLANTS USING ADVANCED MANUFACTURING*

Congressional Add: *Program Increase - HYPERSONIC AND STRATEGIC MATERIALS AND STRUCTURES*

Congressional Add: *Program Increase - HYPERSONIC METAL ALLOYS*

Congressional Add: *Program Increase - MISSILE MULTI AGENT EXTENSIBLE ENGAGEMENT SERVICES*

Congressional Add: *Program Increase - SUPER RAMJET ARTILLERY MISSION*

	FY 2022	FY 2023
	25.000	25.000
	20.000	-
	3.000	9.000
	-	10.000
	-	5.000
	-	8.000
	-	2.000
	-	15.000
	-	8.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603464A / <i>Long Range Precision Fires Advanced Technology</i>
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Congressional Add Details (\$ in Millions, and Includes General Reductions)

Congressional Add: *Program Increase - XM1155 GUIDED FLIGHT PROJECTILE*

Congressional Add Subtotals for Project: BO8

Congressional Add Totals for all Projects

	FY 2022	FY 2023
	-	20.000
	48.000	102.000
	48.000	102.000

Change Summary Explanation

Funding increase in FY24 reflects planned program development and demonstration of seeker and navigation component technologies and supports transition of thermal protection materials for the Common Hypersonic Glide Body (CHGB) and the Long Range Hypersonic Weapon system.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology				Project (Number/Name) AE8 / Land-Based Anti-Ship Missile (LBASM) Advanced Tech			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
AE8: Land-Based Anti-Ship Missile (LBASM) Advanced Tech	-	15.125	12.150	-	-	-	-	-	-	-	0.000	27.275
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project directly supports Long Range Precision Fires Modernization Priority capabilities by maturing and demonstrating critical technologies to detect, engage, and defeat moving land or maritime surface targets under all conditions.

Research in this Project complements Program Element (PE) 0602147A (Long Range Precision Fires Technology).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Futures Command (AFC).

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

	FY 2022	FY 2023	FY 2024
<p>Title: Land Based Anti-Ship Missile (LBASM) Advanced Technology</p> <p>Description: Matures and demonstrates technologies that enable high-mobility artillery rocket system (HIMARS) and multiple-launch rocket system (MLRS) rocket/missile artillery systems to destroy enemy air defenses in the land and the maritime domains.</p> <p>FY 2023 Plans: Will end demonstrations and data evaluation of multi-mode seeker technologies in a surrogate missile system. Will mature concepts for re-factoring multi-mode seeker technologies into PrSM form factor. Will demonstrate multi-mode seeker technologies as part of the PrSM form factor through hardware-in-the-loop to verify operation when integrated with other PrSM components.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding change reflects conclusion of this effort</p>	15.125	11.826	-
<p>Title: SBIR/STTR Transfer</p> <p>Description: Funding transferred in accordance with Title 15 USC §638</p> <p>FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>	-	0.324	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603464A / <i>Long Range Precision Fires Advanced Technology</i>	Project (Number/Name) AE8 / <i>Land-Based Anti-Ship Missile (LBASM) Advanced Tech</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Funding transferred in accordance with Title 15 USC §638			
Accomplishments/Planned Programs Subtotals	15.125	12.150	-

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology				Project (Number/Name) AF2 / Long Range Maneuverable Fires (LRMF) Advanced Tech			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
AF2: Long Range Maneuverable Fires (LRMF) Advanced Tech	-	-	4.663	62.661	-	62.661	50.970	50.126	1.311	1.658	0.000	171.389
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project directly supports Long Range Precision Fires Modernization Priority capabilities by developing, maturing and demonstrating next generation Multi-Domain Operations extended range weapon system technology for Precision Strike Missile to increase survivability, penetration, and range in complex Anti Access/Area Denial (A2/AD) and denied environments. This Project also includes both the maturation and demonstration of advanced extended range missile technology and autonomous, unmanned launcher technology. The combination of these technologies offers the potential to dramatically increase force projection through increases in range, firepower, and magazine depth.

Research in this Project complements Program Element (PE) 0602147A (Long Range Precision Fires Technology).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Futures Command (AFC).

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

	FY 2022	FY 2023	FY 2024
Title: Long Range Maneuverable Fires (LRMF) Advanced Tech	-	4.493	62.661
Description: Matures and demonstrates next generation Multi-Domain Operations extended range weapon system technology for Precision Strike Missile to increase survivability, penetration, and range in complex A2/AD and denied environments. Includes maturation and demonstration of advanced extended range missile technology and autonomous, unmanned launcher technology.			
FY 2023 Plans: Will develop and mature combined cycle extended range missile propulsion engine and autonomous unmanned launcher designs and perform critical sub-system assessments in preparation for system level integration.			
FY 2024 Plans: Will mature system detailed design that integrates combined cycle extended range missile propulsion engine and other critical component technologies such as navigation, guidance and control subsystems and perform subsystem and system level testing through laboratory, wind tunnel, and field tests. Mature development of modeling and simulation and hardware in the loop (HWIL) capability for evaluation of component design and system performance predictions. Will complete system level integration and test			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology	Project (Number/Name) AF2 / Long Range Maneuverable Fires (LRMF) Advanced Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
of an autonomous unmanned launcher and conduct field demonstrations of vehicle autonomy and remote launch pod control and munition live fire. FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase to support Army high priority effort for agile acceleration of PrSM Inc IV extended range capability to reach TRL 6 in FY26. Significant ramp up in level of effort as the project moves from the extended range missile design activity to critical component and subsystem development on a compressed timeline, executed in parallel with autonomous unmanned launcher system integration and demonstration efforts. FY24 funding increase is a realignment in the amount of \$16.118M from 0603464ACZ8 (PrSM Modular Payload Advanced Development).				
Title: SBIR/STTR Transfer Description: Funding transferred in accordance with Title 15 USC §638 FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638		-	0.170	-
Accomplishments/Planned Programs Subtotals		-	4.663	62.661
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology				Project (Number/Name) AG3 / Extended Range Cannon Artillery (ERCA) Adv Tech			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
AG3: <i>Extended Range Cannon Artillery (ERCA) Adv Tech</i>	-	3.003	3.354	-	-	-	6.480	9.418	11.309	11.432	0.000	44.996
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project directly supports Long Range Precision Fires (LRPF) Modernization Priority capabilities. This Project matures and demonstrates artillery technologies including light weight cannon and mount structures, high efficiency recoil cylinders, common lower power fire control hardware, improved fire control software, and improved sensor to shooter communications which will increase range and accuracy without an increase in platform weight. This Project also develops a collaborative environment with analytic capabilities to support Fires and Intel Soldiers.

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Futures Command (AFC).

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

	FY 2022	FY 2023	FY 2024
Title: Synchronized High Op-Tempo (SHOT) Targeting for LRPF	3.003	3.232	-
Description: This effort develops a collaborative environment with analytic capabilities to support Fires and Intel Soldiers in organizing planning products, and analytics that automate data discovery and development of targets and streamlining workflows that support Course of Action development.			
FY 2023 Plans: Will mature software and technical documentation including drawings, concept of operation, and standard operating procedures. I. Will mature and optimize draft training technology package concepts. Will demonstrate targeting cycle support technologies in an operationally relevant exercise environment. Will mature all technology components for validation and demonstration in an integrated targeting data system.			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decrease reflects the planned lifecycle of this effort as the demonstration of targeting technologies will be completed in FY23.			
Title: SBIR/STTR Transfer	-	0.122	-
Description: Funding transferred in accordance with Title 15 USC §638			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603464A / <i>Long Range Precision Fires Advanced Technology</i>	Project (Number/Name) AG3 / <i>Extended Range Cannon Artillery (ERCA) Adv Tech</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<i>FY 2023 Plans:</i> Funding transferred in accordance with Title 15 USC §638				
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Funding transferred in accordance with Title 15 USC §638				
Accomplishments/Planned Programs Subtotals		3.003	3.354	-
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology				Project (Number/Name) AG5 / Extended Range Artillery Munition Suite Adv Tech			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
AG5: <i>Extended Range Artillery Munition Suite Adv Tech</i>	-	32.594	27.461	23.484	-	23.484	9.726	-	10.197	8.243	0.000	111.705
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project directly supports Long Range Precision Fires Modernization Priority capabilities. This Project matures and demonstrates extended range artillery technologies including advanced projectile propulsion and guidance technologies to increase range and accuracy.

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Futures Command (AFC).

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

	FY 2022	FY 2023	FY 2024
Title: Extended Range Artillery Munition Suite Advanced Technology	32.594	25.113	20.272
Description: Matures and optimizes long range unitary artillery projectile systems in the areas of range, precision, counter-measure, and payload technologies.			
FY 2023 Plans: Continue demonstration of long-range unitary artillery projectile designs to validate system modeling and simulation (M&S), architectures, and component capabilities. Validate configurations of projectile technologies for increased performance. Demonstrate gun launched munition survivability and aeroballistic stability. Mature advanced range extending propulsion technologies. Complete demonstration of integrated technologies in extended range artillery projectiles including: guidance algorithms, sensors, propulsion, and range extension technologies. Mature extended range airframe concepts for conventional and cargo munitions for advanced effects compatible with current and future artillery systems. Demonstrate payload concepts and configurations for extended range gun-launched airframe delivered effects to include sub-munition dispensing techniques and survivability.			
FY 2024 Plans: Will demonstrate advanced range extension through in flight propulsion systems, optimized aeroballistic airframe geometries and precision technologies. Will optimize airframe architectures for integration of components to enable target seeking missions. Will demonstrate extended range munition concepts for conventional coordinate- seeking and cargo munitions. Will optimize payload integration for extended range gun-launched airframes to include sub-munition dispensing techniques and survivability.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology	Project (Number/Name) AG5 / Extended Range Artillery Munition Suite Adv Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Will optimize extended range projectile airframes to maximize range and effectiveness across current and developmental weapon platforms and propelling charge systems. FY 2023 to FY 2024 Increase/Decrease Statement: Funding decrease reflects planned lifecycle of this effort as the demonstration of extended range technologies will be completed.				
Title: Optionally Manned Artillery Advanced Technology Description: Develop automated cannon artillery solutions for fuze-setting, firing, as well as rearming to exponentially increase rate of fire and out-pace future near-peer, high operational-tempo (OPTEMPO) engagements, and reduce Soldier burden. FY 2023 Plans: Mature technologies for OPTEMPO long range fires concepts to include: automated fuze setting, automated re-arm and re-supply, and fire control and diagnostics. Mature modeling and simulation M&S concepts and analytical system trades to improve: the performance, effectiveness, and current and future operations of automated cannon artillery solutions. FY 2024 Plans: Will demonstrate technologies to improve the rate of fire of artillery systems including automated fuze setting, automated re-arm and re-supply, and fire control and diagnostics. Will validate modeling and simulation concepts that will increase the speed and performance of cannon artillery systems. FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase reflects planned lifecycle of this effort to cover the demonstration of integrated technologies.		-	1.802	3.212
Title: SBIR/STTR Transfer Description: Funding transferred in accordance with Title 15 USC §638 FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638		-	0.546	-
Accomplishments/Planned Programs Subtotals		32.594	27.461	23.484
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603464A / <i>Long Range Precision Fires Advanced Technology</i>	Project (Number/Name) AG5 / <i>Extended Range Artillery Munition Suite Adv Tech</i>

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology			Project (Number/Name) AG7 / Energetic Materials and Adv Processing Adv Tech				
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
AG7: Energetic Materials and Adv Processing Adv Tech	-	2.020	1.954	-	-	-	-	-	-	-	0.000	3.974
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project directly supports Long Range Precision Fires Modernization Priority capabilities. This Project matures and demonstrates the performance of energetic materials ranging from medium caliber through large caliber weapons.

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Futures Command (AFC).

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

	FY 2022	FY 2023	FY 2024
<p>Title: Scale-up of Insensitive Energetic Materials</p> <p>Description: This effort matures and demonstrates the performance and insensitivity of energetic materials ranging from 25mm medium caliber (direct fire) through 155mm large caliber (indirect fire) weapons.</p> <p>FY 2023 Plans: Will optimize energetic materials concepts and advanced processing methods to increase scale of manufacture designs and obtain higher throughput of ingredients and formulations. Will validate high-energy explosive and propellant formulations with advanced ignition components in representative applications. Will mature and validate high energy density formulations and material characterization of various insensitive energetic materials.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding change reflects planned conclusion of this effort</p>	2.020	1.908	-
<p>Title: SBIR/STTR Transfer</p> <p>Description: Funding transferred in accordance with Title 15 USC §638</p> <p>FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>	-	0.046	-

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Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603464A / <i>Long Range Precision Fires Advanced Technology</i>	Project (Number/Name) AG7 / <i>Energetic Materials and Adv Processing Adv Tech</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Funding transferred in accordance with Title 15 USC §638			
Accomplishments/Planned Programs Subtotals	2.020	1.954	-

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology				Project (Number/Name) BO8 / Long Range Precision Fires Advanced Tech (CA)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
BO8: Long Range Precision Fires Advanced Tech (CA)	-	48.000	102.000	-	-	-	-	-	-	-	0.000	150.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
Congressional Interest Item funding provided for Long Range Precision Advanced Technology.

A. Mission Description and Budget Item Justification

Congressional Interest Item funding provided for Long Range Precision Advanced Technology.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

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

	FY 2022	FY 2023
<i>Congressional Add:</i> Program Increase - Hypervelocity Projectile Extended Range	25.000	25.000
<i>FY 2022 Accomplishments:</i> Congressional Interest Item funding provided for Hypervelocity Projectile Extended Range		
<i>FY 2023 Plans:</i> Congressional Interest Item funding provided for Hypervelocity Projectile Extended Range		
<i>Congressional Add:</i> Extended Range Artillery Munitions Suite	20.000	-
<i>FY 2022 Accomplishments:</i> Congressional Interest Item funding provided for Extended Range Artillery Munitions Suite		
<i>Congressional Add:</i> Program Increase - Maneuvering Submunitions for Precision Strike Missile	3.000	9.000
<i>FY 2022 Accomplishments:</i> Congressional Interest Item funding provided for Maneuvering Submunitions for Precision Strike Missile		
<i>FY 2023 Plans:</i> Congressional Interest Item funding provided for Maneuvering Submunitions for Precision Strike Missile		
<i>Congressional Add:</i> Program Increase - AFT COMBUSTOR RAMJET PROPULSION	-	10.000

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Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology	Project (Number/Name) BO8 / Long Range Precision Fires Advanced Tech (CA)
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023
FY 2023 Plans: Congressional Interest Item funding provided for AFT COMBUSTOR RAMJET PROPULSION		
Congressional Add: Program Increase - DEVELOPMENT AND TESTING OF PROPELLANTS USING ADVANCED MANUFACTURING	-	5.000
FY 2023 Plans: Congressional Interest Item funding provided for DEVELOPMENT AND TESTING OF PROPELLANTS USING ADVANCED MANUFACTURING		
Congressional Add: Program Increase - HYPERSONIC AND STRATEGIC MATERIALS AND STRUCTURES	-	8.000
FY 2023 Plans: Congressional Interest Item funding provided for HYPERSONIC AND STRATEGIC MATERIALS AND STRUCTURES		
Congressional Add: Program Increase - HYPERSONIC METAL ALLOYS	-	2.000
FY 2023 Plans: Congressional Interest Item funding provided for Hypersonic Metal Alloys		
Congressional Add: Program Increase - MISSILE MULTI AGENT EXTENSIBLE ENGAGEMENT SERVICES	-	15.000
FY 2023 Plans: Congressional Interest Item funding provided for MISSILE MULTI AGENT EXTENSIBLE ENGAGEMENT SERVICES		
Congressional Add: Program Increase - SUPER RAMJET ARTILLERY MISSION	-	8.000
FY 2023 Plans: Congressional Interest Item funding provided for SUPER RAMJET ARTILLERY MISSION		
Congressional Add: Program Increase - XM1155 GUIDED FLIGHT PROJECTILE	-	20.000
FY 2023 Plans: Congressional Interest Item funding provided for XM1155 GUIDED FLIGHT PROJECTILE		
Congressional Adds Subtotals	48.000	102.000

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology				Project (Number/Name) BY2 / Advanced Hypersonic Technology			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
BY2: Advanced Hypersonic Technology	-	37.740	36.517	64.136	-	64.136	49.592	50.808	50.835	51.633	0.000	341.261
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project directly supports Long Range Hypersonic Precision Fires Modernization Priority capabilities by developing and maturing critical technologies for strategic missiles. Technology development includes critical technologies to improve strategic missile components such as advanced structures and materials, thermal protection systems, navigation systems, data links, and seekers/terminal sensors.

The cited research is consistent with Under Secretary of Defense for Research and Engineering Science and Technology priority focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States (U.S.) Army Futures Command (AFC) in coordination with the United States Army Rapid Capabilities and Critical Technologies Office (RCCTO).

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

	FY 2022	FY 2023	FY 2024
Title: Hypersonics Advanced Technology	37.740	35.184	64.136
Description: This effort matures and demonstrates new subsystems and components of a hypersonic weapon delivery system to defeat Anti Access/Area Denial (A2/AD) capabilities, suppress adversary Long Range Fires, and engage other payoff/ time critical targets.			
FY 2023 Plans: Will optimize candidate Common Hypersonic Glide Body (CHGB) thermal protection materials and material processing techniques to support critical material decisions for hypersonic weapon applications; will mature simulation tools for optimization of vehicle flight performance; will mature Guidance Navigation & Control (GN&C) technology to reduce both size, weight, and power (SWAP) / packaging and reliance on GPS for navigation accuracy and will mature seeker / terminal sensor technologies.			
FY 2024 Plans: Will complete development and transition of 2D/3D carbon-carbon thermal protection materials and material processing techniques and standards to design agent and industry partners in support of critical material decisions for the Common Hypersonic Glide Body (CHGB). Will demonstrate guidance, navigation and control technology to reduce both size, weight, and power (SWAP) packaging and reliance on GPS for navigation accuracy in contested environments. Will mature and demonstrate			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603464A / <i>Long Range Precision Fires Advanced Technology</i>	Project (Number/Name) BY2 / <i>Advanced Hypersonic Technology</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
seeker and terminal sensor component technologies to include seeker window, antenna, and transceiver for hypersonic weapon applications. FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase in FY24 reflects planned program development and demonstration of seeker and navigation component technologies and supports transition of thermal protection materials for the Common Hypersonic Glide Body (CHGB) and the Long Range Hypersonic Weapon system.			
Title: SBIR/STTR Transfer FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638	-	1.333	-
Accomplishments/Planned Programs Subtotals	37.740	36.517	64.136

C. Other Program Funding Summary (\$ in Millions) N/A
Remarks
D. Acquisition Strategy N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603464A / Long Range Precision Fires Advanced Technology				Project (Number/Name) CZ8 / PrSM Modular Payload Advanced Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
<i>CZ8: PrSM Modular Payload Advanced Development</i>	-	-	14.731	2.743	-	2.743	2.808	10.232	33.278	33.307	0.000	97.099
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project directly supports Long Range Precision Fires Modernization Priority capabilities by maturing and demonstrating critical technologies for autonomous, Cluster Munition policy compliant, enhanced lethality payloads deployed from Precision Strike Missile to autonomously and cooperatively find and engage the full spectrum of deep moved, moving, dispersed, and poorly located targets in areas with contested access at extended ranges.

Research in this Project complements Program Element (PE) 0602147A (Long Range Precision Fires Technology).

The cited research is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Futures Command (AFC).

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

	FY 2022	FY 2023	FY 2024
Title: Precision Strike Missile (PrSM) Advanced Development/PrSM Modular Payload	-	14.193	2.743
Description: Mature and demonstrate critical technologies for the delivery of distributed and enhanced lethality capabilities via extended range missiles. Technology examples include: sensor and associated signal processing technologies for target acquisition, identification, and engagement; datalink and communications technologies to transmit targetable data; compact propulsion technologies to enable dwell time on station; payload dispensing technologies for deploying these payloads from high speed long range missiles; and advanced extended range missile propulsion and guidance technologies.			
FY 2023 Plans: Continue enhanced lethality payload designs, initiate sub-system testing verifying expected component performance, begin development of advanced extended range missile propulsion and guidance technologies, and update high fidelity simulations to assess integrated missile performance.			
FY 2024 Plans: Will continue to mature critical component technologies and integrate payload enhanced lethality models and autonomy algorithms in high fidelity simulation to optimize missile terminal engagement performance.			
FY 2023 to FY 2024 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603464A / <i>Long Range Precision Fires Advanced Technology</i>	Project (Number/Name) CZ8 / <i>PrSM Modular Payload Advanced Development</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
FY24 funding reduced (-\$16.118M) and realigned to PE 0603464/Project AF2 Long Range Maneuverable Fires to accelerate advanced technologies for PrSM Increment IV extended range capabilities, Army priority effort.			
Title: SBIR/STTR Transfer Description: Funding transferred in accordance with Title 15 USC §638 FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638	-	0.538	-
Accomplishments/Planned Programs Subtotals	-	14.731	2.743

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

Remarks

D. Acquisition Strategy
N/A