

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army **Date:** February 2020

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 0604182A / <i>Hypersonics</i>
---	--

COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	0.000	404.000	801.417	-	801.417	526.501	755.294	592.452	576.243	0.000	3,655.907
HX1: <i>Long-Range Hypersonic Weapon</i>	-	0.000	404.000	801.417	-	801.417	526.501	755.294	592.452	576.243	0.000	3,655.907

A. Mission Description and Budget Item Justification

The Program Element (PE) 0604182A Hypersonics funds the Rapid Capabilities and Critical Technologies Office (RCCTO) hypersonic effort.

Project HX1 Long-Range Hypersonic Weapon funds the RCCTO to field an experimental/prototype Hypersonic Weapon System with residual combat capability at the Battery Level as part of the Strategic Fires Battalion in support of Multi-domain Operations. The Long Range Hypersonic Weapon (LRHW) system will provide the Army a prototype strategic attack weapon system to defeat Anti Access/Area Denial (A2/AD) capabilities, suppress adversary Long Range Fires, and engage other high payoff/time critical targets. LRHW is common with other Department of Defense (DoD) hypersonic programs using the Common Hypersonic Glide Body, and the Navy 34.5 inch booster. Additionally the LRHW will include an existing Army Battle Fire Control system.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	228.000	181.000	-	181.000
Current President's Budget	0.000	404.000	801.417	-	801.417
Total Adjustments	0.000	176.000	620.417	-	620.417
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	176.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	620.417	-	620.417

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

Project: HX1: *Long-Range Hypersonic Weapon*

Congressional Add: *Transfer from RDTE, DW line 124*

Congressional Add: *Program increase*

Congressional Add: *Program increase - hypersonic and strategic materials and structures center of excellence*

	FY 2019	FY 2020
	-	31.000
	-	130.000
	-	15.000

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army	Date: February 2020
---	----------------------------

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 0604182A / <i>Hypersonics</i>
---	--

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

	FY 2019	FY 2020
Congressional Add Subtotals for Project: HX1	-	176.000
Congressional Add Totals for all Projects	-	176.000

Change Summary Explanation

The \$620.417 million increase is driven in support of the fielding of an experimental prototype with residual combat capability . The program plans on executing and accelerating the building and delivery of Long Range Hypersonic Weapon, Common Hypersonic Glide Body (CHGB) prototypes, and 34.5 inch Missile Body booster prototypes. Additionally, prototyping of Thermal Protection System (TPS) for the glide bodies will be stood up to expand the industrial base of TPS suppliers.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army										Date: February 2020		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604182A / <i>Hypersonics</i>				Project (Number/Name) HX1 / <i>Long-Range Hypersonic Weapon</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
HX1: <i>Long-Range Hypersonic Weapon</i>	-	0.000	404.000	801.417	-	801.417	526.501	755.294	592.452	576.243	0.000	3,655.907
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Program Element (PE) 0604182A Hypersonics funds the Rapid Capabilities and Critical Technologies Office (RCCTO) hypersonic effort.

Project HX1 Long-Range Hypersonic Weapon funds the RCCTO to field an experimental/prototype Hypersonic Weapon System with residual combat capability at the Battery Level as part of the Strategic Fires Battalion in support of Multi-domain Operations. The Long Range Hypersonic Weapon (LRHW) system will provide the Army a prototype strategic attack weapon system to defeat Anti Access/Area Denial (A2/AD) capabilities, suppress adversary Long Range Fires, and engage other high payoff/time critical targets. LRHW is common with other Department of Defense (DoD) hypersonic programs using the Common Hypersonic Glide Body, and the Navy 34.5 inch booster. Additionally the LRHW will include an existing Army Battle Fire Control system.

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

	FY 2019	FY 2020	FY 2021
Title: Long Range Hypersonic Weapon	-	217.646	801.417
Description: Funding is provided for planning, prototype manufacturing and testing of the Long Range Hypersonic Weapon.			
FY 2020 Plans: The Army Hypersonic Project Office worked with the Weapon System Integration Contractor to get through Systems Requirements Review and move towards a Preliminary Design Review for the system. Funding was used to order CHGBs and boosters for integration into All Up Rounds starting in Fiscal Year (FY) 2021.			
FY 2021 Plans: During FY 2021, LRHW will conduct a flight test (FT-3). During FY 2021, LRHW subsystems and components will continue fabrication with first articles. First articles will undergo testing and integration culminating in an initial prototype. Concurrent with LRHW prototype manufacturing, flight tests will occur to validate designs of the CHGB and booster stack. Flight test data collected will be used to anchor the system models and simulations. Prototyping of Thermal Protection System (TPS) for the glide bodies will be stood up to expand the industrial base of TPS suppliers.			
FY 2020 to FY 2021 Increase/Decrease Statement: The \$397.417 million increase is in support of the procurement of the long lead items (LLI) for the units produced in FY 2023. It includes support to conduct FT-3. It also includes flight test support, hardware and labor for JFC-1 and ASFT-1 to be conducted in FY 2022.			
Title: FY 2020 SBIR/STTR Transfer	-	10.354	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army	Date: February 2020
--	----------------------------

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604182A / <i>Hypersonics</i>	Project (Number/Name) HX1 / <i>Long-Range Hypersonic Weapon</i>
--	--	---

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Description: Funding transferred in accordance with Title 15 USC 638			
FY 2020 Plans: Funding transferred in accordance with Title 15 USC 638			
FY 2020 to FY 2021 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638			
Accomplishments/Planned Programs Subtotals	-	228.000	801.417

	FY 2019	FY 2020
Congressional Add: Transfer from RDTE, DW line 124	-	31.000
FY 2020 Plans: Transfer from RDTE, DW line 124		
Congressional Add: Program increase	-	130.000
FY 2020 Plans: Program increase		
Congressional Add: Program increase - hypersonic and strategic materials and structures center of excellence	-	15.000
FY 2020 Plans: Program increase - hypersonic and strategic materials and structures center of excellence		
Congressional Adds Subtotals	-	176.000

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

N/A

Remarks

D. Acquisition Strategy

The Army will field an experimental/prototype Hypersonic Weapons System with residual operational capability under an Urgent Materiel Release (UMR) like release NLT FY 2023 at the Battery Level as part of the Strategic Fires Battalion in support of Multi-domain Operations. CLS will be provided for one year. AHPO uses a combination of Other Transaction Authority's (OTA's) and the Navy CPS contract with Lockheed Martin.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604182A / <i>Hypersonics</i>	Project (Number/Name) HX1 / <i>Long-Range Hypersonic Weapon</i>
--	--	---

Event Name	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				
	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	
Prototype Build																													
Systems Requirement Review					▲ 1																								
Preliminary Design Review							▲ 2																						
Critical Design Review								▲ 3																					
Flight Testing																													
Contractor Logistics Support (CLS)																													
Transition to POR																									▲ 4				

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604182A / <i>Hypersonics</i>	Project (Number/Name) HX1 / <i>Long-Range Hypersonic Weapon</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Prototype Build	3	2019	4	2023
Systems Requirement Review	1	2020	1	2020
Preliminary Design Review	2	2020	2	2020
Critical Design Review	1	2021	1	2021
Flight Testing	3	2021	2	2023
Contractor Logistics Support (CLS)	1	2024	4	2024
Transition to POR	4	2024	4	2024