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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</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	-	112.015	150.340	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	262.355
643882: <i>Air-Launched Rapid Response Weapon (ARRW)</i>	-	112.015	150.340	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	262.355

Note

In FY 2024, HACM funding under PE0604033F, Project 643883 Hypersonic Attack Cruise Missile, efforts were transferred to PE 0604183F, Project 644183 Hypersonic Attack Cruise Missile in order to continue HACM development.

In FY 2024, project 643882 was completed.

A. Mission Description and Budget Item Justification

The Hypersonics Prototyping program enables integration and demonstration of emerging hypersonic technologies in an operational or operational-like environment to capitalize on successful laboratory hypersonic research and development efforts with high warfighter priority. Integration and demonstration of hypersonic prototypes also allows leadership to make informed strategy and resource decisions for future programs based on the results of such hypersonic prototype demonstrations.

Hypersonic Prototyping enables a key linkage between research and development in the lab and fielding advanced technologies to the warfighter. Under this program, Air-Launched Rapid Response Weapon (ARRW) will accelerate the technology transfer of hypersonic technologies to enable a responsive, long range strike capability.

Throughout this program element will be future hypersonic development, which will incubate and mature new technologies, processes, and resources for the development and demonstration of hypersonic technology including, but not limited to, infrastructure advancements, digital engineering, open systems architecture, modeling and simulation, analytics, and high performance computing environments.

Investing in hypersonics development enables the collection of valuable data, builds capacity and capability, allows hypersonic programs to leverage and build upon each other, and projects the overall technology forward.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In PY \$4.158 million was expended for civilian pay expenses in this program element, in CY \$4.967 million is forecasted for civilian pay expenses.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	114.981	150.340	0.000	0.000	0.000
Current President's Budget	112.015	150.340	0.000	0.000	0.000
Total Adjustments	-2.966	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-2.966	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

Change Summary Explanation

In FY 2023, funding decreased \$2.966M for SBIR in PE 0604033, Project 643882 Air-Launched Rapid Response Weapon

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Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i>	Project (Number/Name) 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</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
643882: <i>Air-Launched Rapid Response Weapon (ARRW)</i>	-	112.015	150.340	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	262.355
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Note

In FY2024, project 643882 was completed.

A. Mission Description and Budget Item Justification

The Air-Launched Rapid Response Weapon (ARRW) project integrates Air Force and DARPA enabled system technologies into a prototype that will demonstrate the viability of this concept to be fielded as a long range prompt strike capability. ARRW will design, develop, manufacture, and test, a number of prototype vehicles to inform decisions concerning ARRW acquisition and production.

Future hypersonics development will incubate and mature new technology, processes, and resources for the development and demonstration of hypersonic technology including, but not limited to, infrastructure advancements, digital engineering, open systems architecture, modeling and simulation, analytics, and high performance computing environments.

Investing in hypersonics development will enable the collection of valuable data, building of capacity and capability, allowing hypersonic programs to leverage and build upon each other, and project the overall technology forward.

In FY 2022, PE 0101101F, Project ARRW00/AGM-183A Air-Launched Rapid Response Weapon, efforts were transferred to PE 0604033F, Hypersonics Prototyping, Project 643882, Air-Launched Rapid Response Weapon, in order to mitigate the testing shortfall.

The total cost of the ARRW Rapid Prototyping Middle Tier of Acquisition effort is \$1,730.073 million, including RDT&E and procurement of prototype units. ARRW is fully funded across the Future Years Defense Program.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In PY \$4.158 million was expended for civilian pay expenses in this program element, CY \$4.967 million is forecasted for civilian pay expenses in this program element.

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

	FY 2023	FY 2024	FY 2025
Title: Air Launched Rapid Response Weapon (ARRW)	112.015	150.340	-

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Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i>	Project (Number/Name) 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
<p>Description: Integrates Air Force and DARPA enabled system technologies into a prototype that will demonstrate the viability of this concept to be fielded as a long range prompt strike capability. ARRW will design, develop, manufacture, and test, a number of prototype vehicles to inform decisions concerning ARRW acquisition, production, and leave behind capability.</p> <p>FY 2024 Plans: Complete the rapid prototyping program and flight testing. The testing will enable ARRW to collect valuable data, build capacity and capability, allow hypersonics programs to leverage and build upon each other, and project the overall technology forward. Additionally, ARRW will complete contract closeout, finalize documentation and analysis, and activities to support the leave behind capability.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding decreased due to completion of the program.</p>			
Accomplishments/Planned Programs Subtotals	112.015	150.340	-

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

N/A

Remarks

D. Acquisition Strategy

Acquisition Decision Memorandum (signed 3 May 2018) designated Air-Launched Rapid Response Weapon (ARRW) as Section 804 Rapid Prototyping Program.

The Air Force awarded in August 2018 an undefinitized contract in order to complete a critical design review and procure all long lead parts and materials. The ARRW Program definitized this contract December 2019 to include the entire RDT&E effort (through the end of flight test). The cost type contract includes schedule incentives. The government agency responsible for managing this program is the Air Force Life Cycle Management Center, Armament Directorate, Eglin AFB, FL.

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

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i>	Project (Number/Name) 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i>
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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			
ARRW - Contract	C/CPFF	LMCO: Various : Various	-	47.686	Dec 2022	91.318	Dec 2023	-		-		-	0.000	139.004	-
ARRW - Mission Planning	C/CPFF	Boeing: Tapestry : TBD	-	0.895	Dec 2022	0.800	Dec 2023	-		-		-	0.000	1.695	-
ARRW - Aircraft Integration	Various	Various : Various	-	2.000	Dec 2022	-		-		-		-	0.000	2.000	-
Subtotal			-	50.581		92.118		-		-		-	0.000	142.699	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			
Direct Cite Authority Civilian Pay	Allot	Not specified. : TBD	-	9.161	Oct 2022	4.967	Oct 2023	-		-		-	0.000	14.128	-
Subtotal			-	9.161		4.967		-		-		-	0.000	14.128	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			
ARRW - Government Test	Various	Various : TBD	-	43.656	Dec 2022	45.340	Dec 2023	-		-		-	0.000	88.996	-
Subtotal			-	43.656		45.340		-		-		-	0.000	88.996	N/A

Management Services (\$ 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			
ARRW - Program Management Administration	Various	Multiple : TBD	-	8.617	Oct 2022	7.915	Oct 2023	-		-		-	0.000	16.532	-
Subtotal			-	8.617		7.915		-		-		-	0.000	16.532	N/A

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Appropriation/Budget Activity 3600 / 4					R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i>					Project (Number/Name) 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i>			

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

Remarks
Includes A&AS support requirements plus TDY, and office supplies.

	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	-	112.015	150.340	-	-	-	0.000	262.355	N/A

Remarks
Additional details on Hypersonics prototyping concepts can be provided in the appropriate forum.

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i>	Project (Number/Name) 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Air Launched Rapid Response Weapon (ARRW)</i>				
ARRW- Contract	1	2023	3	2024
Flight Tests	1	2023	2	2024

Note
Further schedule details can be provided in the appropriate forum.