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

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603036F <i>I Armament Demonstration and Validation</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	125.688	0.000	125.688	152.948	219.689	56.331	52.191	0.000	606.847
643036: <i>Armament Demonstration and Validation</i>	-	0.000	0.000	125.688	0.000	125.688	152.948	219.689	56.331	52.191	0.000	606.847
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

This program, BA 4, PE 0603036F Armament Demonstration and Validation, project 643036, Modular Advanced Missile (MAM) is not a new start. Work started in FY 2022 and this is a continuation of work conducted under a separate PE.

The Armament Demonstration and Validation Program Element provides key linkage between Research and Development, and fielding of advanced capabilities. It will develop, mature, and demonstrate new or emerging armament technologies, processes, interfaces, mission planning, special test equipment, and resources. Armament Demonstration and Validation will design, develop, and perform demonstrations of prototypes and technologies to inform future acquisition and production decisions. Efforts are focused on current and future requirements and technologies, reduce life-cycle costs, and increased competition for system capability upgrades. Activities leverage the efforts of the Science and Technology community. This effort will include lab, bench, integration, ground and air demonstrations and validation of emerging/evolving technologies and systems via weapon scalable/modular architecture and Weapon Government Reference Architecture (GRA) compliant system performance.

This effort will mature and demonstrate the tenants of model based systems engineering, modular open systems architecture, agile software development, modeling, simulation and analysis, and extend these tenants to improve manufacturing processes.

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 0605831F. In FY 2023, \$5.000 million is forecasted for civilian pay expenses in this program element.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	
Previous President's Budget	0.000	0.000	0.000	0.000	0.000	
Current President's Budget	0.000	0.000	125.688	0.000	125.688	
Total Adjustments	0.000	0.000	125.688	0.000	125.688	
• 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	0.000	0.000				
• Other Adjustments	0.000	0.000	125.688	0.000	125.688	
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>				<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b>Title:</b> Modular Advanced Missile (MAM)/Air-to-Air Missile Prototype (AAMP)				-	0.000	124.688
<b>Description:</b> The Modular Advanced Missile (MAM) project will develop, mature, and demonstrate new Medium Range Missile (MRM) technologies, processes, and resources. MAM will design, develop, and test a number of prototype missiles to inform future MRM acquisition and production decisions.						
<b>FY 2022 Plans:</b> Not Applicable						
<b>FY 2023 Plans:</b> This program, BA 4, PE 0603036F Armament Demonstration and Validation, project 643036, Modular Advanced Missile (MAM) is not a new start. Continue detailed digital design of prototype weapons for future air launched and bench demonstrations. Order long-lead material necessary to produce prototype missiles for both air launched kinematic demonstration and bench demonstrations of form factored prototype missiles. Subsystem and system level integration will begin, as long-lead delivery schedule allows. Integrated Test Team will begin test planning with contractors. Weapon integration on test aircraft planning and design activities will occur. Rapidly respond to evolving warfighter priorities and emerging requirements.						
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> FY 2023 funding increased compared to FY 2022 by \$124.688 million. Modular Advanced Missile is not a new start. Work started in FY 2022 and this is a continuation of work conducted under a separate PE.						
<b>Title:</b> Emerging & Enabling Armament Technology				-	0.000	1.000

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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603036F / <i>Armament Demonstration and Validation</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<p><b>Description:</b> Conduct risk reduction and prototyping activities on emerging and enabling technologies to inform future acquisition and production decisions for the armament portfolio, informed by internal and external stakeholders.</p> <p><b>FY 2022 Plans:</b> Not applicable</p> <p><b>FY 2023 Plans:</b> Perform risk reduction through prototyping of critical components.</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> FY 2023 funding increased compared to FY 2022 by \$1.000 million. Work started in FY 2022 and this is a continuation of work conducted under a separate PE.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	-	0.000	125.688

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

Accomplish studies, analysis, concept demonstration, prototyping and engineering; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive contracts and/or other obligating documentation considered most appropriate by the obligating and performing agencies involved.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 4				PE 0603036F / Armament Demonstration and Validation				643036 / Armament Demonstration and Validation							
<b>Product Development (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 Development and Integration	C/CPFF	Various : TBD	-	-		-		114.114	Sep 2023	-		114.114	Continuing	Continuing	-
Emerging & Enabling Armament Technology	TBD	TBD : TBD	-	-		-		1.000		-		1.000	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		115.114		-		115.114	Continuing	Continuing	N/A
<b>Support (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Platform Integration	PO	96th Test Wing : Eglin, AFB, FL	-	-		-		1.482	Nov 2022	-		1.482	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		1.482		-		1.482	Continuing	Continuing	N/A
<b>Test and Evaluation (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Other Government Costs	TBD	TBD : TBD	-	-		-		0.601	Nov 2022	-		0.601	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.601		-		0.601	Continuing	Continuing	N/A
<b>Management Services (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Program Management Administration	Various	Various : Various	-	-		-		8.491	May 2023	-		8.491	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		8.491		-		8.491	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603036F / <i>Armament Demonstration and Validation</i>	<b>Project (Number/Name)</b> 643036 / <i>Armament Demonstration and Validation</i>

FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Modular Advanced Missile</i></b>	
Systems Development and Integration	
Platform Integration	
Other Government Costs	
Program Management Administration	
<b><i>Emerging &amp; Enabling Armament Technology</i></b>	
Emerging Technology	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603036F / <i>Armament Demonstration and Validation</i>	<b>Project (Number/Name)</b> 643036 / <i>Armament Demonstration and Validation</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Modular Advanced Missile</i></b>				
Systems Development and Integration	4	2023	4	2027
Platform Integration	1	2023	4	2027
Other Government Costs	1	2023	4	2027
Program Management Administration	1	2023	4	2027
<b><i>Emerging &amp; Enabling Armament Technology</i></b>				
Emerging Technology	1	2023	4	2027