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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207161F / <i>Tactical AIM Missiles</i>
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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	252.456	31.863	34.536	41.958	0.000	41.958	34.871	16.118	16.448	17.043	67.931	513.224
674132: <i>AIM-9 Product Improvement</i>	252.456	31.863	34.536	41.958	0.000	41.958	34.871	16.118	16.448	17.043	67.931	513.224
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Program MDAP/MAIS Code: 442

A. Mission Description and Budget Item Justification

The AIM-9X Block II/II+ Sidewinder (AIM-9X Blk II/II+) continues the evolution of the AIM-9 series of missiles. This missile program delivers a launch and leave, air combat munition that uses passive Infrared (IR) energy to acquire and track enemy air targets and complements the radar guided Advanced Medium Range Air-to-Air Missile (AMRAAM). The missile provides first shot, first kill opportunities while conducting air combat maneuvering Within Visual Range (WVR) which is essential for aircrew survival. The AIM-9X provides these opportunities with unmatched offensive and defensive capabilities against threats WVR, even when IR countermeasures are employed. The AIM-9X also provides air superiority in the Beyond Visual Range (BVR) air-to-air battle. Anti-tamper features have been incorporated to protect improvements inherent in this design. The AIM-9X Block II missile is critical for projecting power and winning decisively against current and emerging threats.

AIM-9X is a Post Milestone C, Acquisition Category IC (ACAT-IC) joint service program led by the Department of the Navy. The Block II program has completed independent operational testing and found to be operationally effective and operational/suitable. The program achieved Air Force Initial Operational Capability (IOC) in September 2016 and received Full Rate Production (FRP) decision in August 2015. In December 2017, the program began to procure a third variant of the missile labeled the AIM-9X Block II PLUS (Block II+) to satisfy the requirements of the Joint Strike Fighter platform. For contracting purposes, the nomenclature of the AIM-9X Block II missile is identified as AIM-9X2 or AIM-9X-4, and the AIM-9X Block II+ missile is identified as AIM-9X3 or AIM-9X-5. The AIM-9X-4/5 variant are the Systems Improvement Program (SIP) III configuration with upgraded hardware for obsolescence that cut into Lot 21. The first FRP Lot contract was awarded in September 2015. This budget line will continue technical refresh of critical obsolete components, implement cost reduction initiatives, correct deficiencies, and increase capabilities through software enhancements, and conduct testing to ensure platform integration onto threshold US Air Force aircraft.

Leverages Digital acquisition tenets of open, agile and digital. This may include providing funds to prime contractors; program office contract support; facility, security and IT upgrades; common component development with other weapon systems to reduce redundant costs.

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, or 0606398F. In FY22, 0.00 were expended for civilian pay expenses in this program element, and in FY23, 0.00 are forecasted for civilian pay expenses in this program element.

This FY 2024 funding request was reduced by \$1.219 million to account for the availability of prior year execution balances.

UNCLASSIFIED

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This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	32.974	34.536	43.079	0.000	43.079
Current President's Budget	31.863	34.536	41.958	0.000	41.958
Total Adjustments	-1.111	0.000	-1.121	0.000	-1.121
• 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	-1.111	0.000			
• Other Adjustments	0.000	0.000	-1.121	0.000	-1.121

Change Summary Explanation

FY2022 funding reduced by 1.111M for SIBR
 FY2024 funding reduced by 1.121M to support higher Air Force priorities

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Title: AIM- 9X Product Development	30.063	32.736	40.158
Description: Continuation of Primary Hardware Development/Pre-Planned Product Improvement (Tech Refresh) efforts for the AIM-9X weapon system. This includes Systems Engineering & Program management, as well as support required to ensure AIM-9X missile integration with threshold US Air Force aircraft platforms. This also includes efforts to redesign missile components in order to resolve obsolescence to ensure missile producibility and increase reliability. It will incorporate anti-tamper and cyber security technology improvements, and implement cost reduction initiatives. In addition, the program will evaluate and begin risk reduction efforts that will address hardware and software improvements to facilitate follow-on capability and mitigate obsolescence.			
FY 2023 Plans: AIM-9X System Improvement Program (SIP) III Software (SW) Engineering Change Proposal (ECP) is planned to be completed in FY2023. Continue software development and test efforts, including Operational Flight Software (OFS) v9.5 and v10.5 to support required performance against increasingly challenging threat platforms. Continue AIM-9X SIP IV hardware development of			

UNCLASSIFIED

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>an advanced sensor and Electronics Unit. Hold Preliminary Design Review (PDR) for the SIP IV hardware. Begin OFS v11.5 development to expand on the updated SIP IV hardware.</p> <p>FY 2024 Plans: Continue SIP IV hardware development efforts to support required tracking performance against threat countermeasures. Plan to release OFS v10.5 which re-hosts existing software for use in hardware replaced for obsolescence. Continue development of OFS v11.5 to take advantage of advanced sensor technology as part of the SIP IV program.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase in FY24 due to ramp up in development and integration efforts of the SIP IV hardware and software improvements to counter advanced threats.</p>			
<p>Title: AIM-9X, Test and Evaluation</p> <p>Description: Test and Evaluation (T&E) and associated governmental support required to ensure the AIM-9X missile integration with US Air Force aircraft platforms. Developmental and Operational testing of OFS.</p> <p>FY 2023 Plans: Complete OFS v10.4 software flight test. Continue OFS v9.5 software Developmental Test (DT) and start Integrated Test (IT).</p> <p>FY 2024 Plans: Complete DT and IT flight test of OFS v10.5 software. Begin initial DT flight test of SIP IV hardware for verification and model development.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>	1.800	1.800	1.800
Accomplishments/Planned Programs Subtotals	31.863	34.536	41.958

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
			Base	OCO	Total						
• MPAF 02 Line Item M09HAI: <i>Sidewinder (AIM-9X)</i>	102.507	111.855	95.643	-	95.643	106.898	127.649	129.845	132.613	1,004.722	1,811.732
• MPAF 04 Line Item 000999: <i>Replen Spares, USAF</i>	5.937	4.641	6.420	-	6.420	6.534	6.613	6.720	6.854	50.468	94.187
• MPAF 04 Line Item 000999 <i>(2)...: Inital Spares, USAF</i>	3.742	3.546	2.023	-	2.023	2.060	2.084	2.117	2.159	34.267	51.998

UNCLASSIFIED

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 07 PE 0207161N: <i>Tactical AIM Missile</i>	23.273	29.236	31.353	-	31.353	26.864	13.179	12.559	12.874	42.608	191.946
• WPN Line Item 2209: <i>Sidewinder</i>	78.606	63.288	77.657	-	77.657	85.361	107.225	108.836	112.272	1,105.767	1,739.012

Remarks

Navy RDT&E and WPN Line Items reflect notional 24PB data and are subject to change when Navy budget controls lock.

E. Acquisition Strategy

Milestone C decision for LRIP was held June 24, 2011. The Block II program received USN Initial Operational Capability (IOC) in March 2015 and FRP Approval in August 2015. The Air Force achieved IOC in September 2016. In February 2019, the Acquisition Program Baseline (APB) for SAF was revised to increase total missile procurements and extend missile procurements through 2035. The program awarded FRP-8 in March 2022, and FRP-9 awarded in December 2022.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207161F / <i>Tactical AIM Missiles</i>	Project (Number/Name) 674132 / <i>AIM-9 Product Improvement</i>
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Software/OFP Upgrade/Hdw Development	SS/CPFF	RMD : Tucson, AZ	189.803	27.989	Oct 2021	30.662	Oct 2022	37.634	Oct 2023	-		37.634	109.031	395.119	325.836
Flight Termination System	MIPR	NAWC WD : China Lake, CA	4.034	-		-		-		-		-	0.000	4.034	10.578
Munitions Improvement Study (USG)	MIPR	NAWC WD : China Lake, CA	12.443	-		-		-		-		-	0.000	12.443	-
Systems Engineering (USG)	MIPR	NAWC WD : China Lake, CA	7.404	1.600	Feb 2022	1.600	Feb 2023	2.050	Feb 2024	-		2.050	13.861	26.515	-
Aircraft Integration	SS/CPFF	Boeing : St. Louis, MO	1.238	0.100	May 2022	0.100	May 2023	0.100	May 2024	-		0.100	0.400	1.938	2.624
Subtotal			214.922	29.689		32.362		39.784		-		39.784	123.292	440.049	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
DT&E/OT&E	PO	Eglin AFB : Eglin, FL	29.055	1.500	Jan 2022	1.500	Jan 2023	1.500	Jan 2024	-		1.500	20.372	53.927	-
IT/OT Support F-15	SS/CPAF	RMD : Tuscon, AZ	0.770	0.300	May 2022	0.300	May 2023	0.300	May 2024	-		0.300	1.200	2.870	3.370
Subtotal			29.825	1.800		1.800		1.800		-		1.800	21.572	56.797	N/A

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
PMA	Various	Eglin AFB : Eglin, FL	7.709	0.374	Jan 2022	0.374	Jan 2023	0.374	Jan 2024	-		0.374	7.547	16.378	7.285
Subtotal			7.709	0.374		0.374		0.374		-		0.374	7.547	16.378	N/A

			Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			252.456	31.863	34.536	41.958	-	41.958	152.411	513.224	N/A

UNCLASSIFIED

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	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>AIM-9X Block II Tech Refresh (SIP III)</i>				
SIP III Hardware (IMU, Dome, Processor)	1	2022	3	2023
SIP III Hardware ECP	3	2023	3	2023
OFS v9.5 Development	1	2022	4	2023
OFS v9.5 Release	1	2024	1	2024
OFS v10.4 (Rehost) Development	1	2022	4	2023
OFS v10.5 Development	1	2023	4	2024
OFS v10.5 Release	4	2024	4	2024
<i>AIM-9X Block II Tech Refresh (SIP IV)</i>				
SIP IV Contract (Hardware, Software Obsolescence)	1	2023	4	2027
SIP IV Hardware (Sensor, Electronics Unit)	1	2023	4	2026
SIP IV Hardware ECP	4	2026	4	2026
OFS v11.5 Development	1	2023	4	2027
OFS v11.5 Release	4	2027	4	2027
OFS v11.6 Development	1	2026	4	2028