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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 / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0207328F / <i>Stand In Attack Weapon</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	0.000	161.199	263.152	298.585	0.000	298.585	381.867	407.928	386.462	305.871	Continuing	Continuing
653133: <i>Stand In Attack Weapon</i>	0.000	161.199	263.152	298.585	0.000	298.585	381.867	407.928	386.462	305.871	Continuing	Continuing
Quantity of RDT&E Articles	10	8	26	7	-	7	6	25	21	10		

A. Mission Description and Budget Item Justification

The Stand-in Attack Weapon (SiAW) system will provide the capability to strike rapidly re-locatable targets that create the Anti-Access/Area Denial (A2/AD) environment. SiAW targets include Theater Ballistic Missile Launchers, Land Attack and Anti-Ship Cruise Missile Launchers, GPS Jammers, Anti-Satellite Systems, and Integrated Air Defense Systems. The SiAW missile system will be developed under a Digital Acquisition (DA) approach in a competitive environment that will emphasize agility and innovation. Interim combat capability will be pursued through the Navy's Advanced Anti-Radiation Guided Missile-Extended Range (AARGM-ER) program with improved warhead/fuze and F-35 integration (including Universal Armament Interface [UAI] and Mission Planning).

Implements Digital Acquisition tenants of Open, Agile, and Digital; builds and establishes industrial base innovation around the program's enterprise for modularity and adaptability for the life cycle of the weapons system. Leverages common component development, in collaboration with other weapon systems, to reduce redundant costs between systems with similar subsystems requirements. Invests in analytical, data management, digital environments, networks, facilities, and security infrastructure upgrades supporting development of this program's capabilities, while leveraging DoD and DAF enterprise IT solutions. Expands program office staff, facilities, and security infrastructure to support the required classification levels for this program's activities. Engages with DoD, DAF, and industry stakeholders to refine threat analysis, refine inventory requirements, and plan upgrade requirements. Capitalizes on and incorporates successful laboratory research and development efforts applicable to this program's capability.

The total cost of the SiAW RP Middle Tier of Acquisition effort is 1,145.33 million, including RDT&E. The SiAW 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 programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2022 4.900M was expended for civilian pay expenses in this program element, and in FY 2023 8.966M is forecasted for civilian pay expenses in this program element.

The FY2024 funding request was reduced by 17.732 million to account for the availability of prior year execution balances.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	166.570	283.152	270.228	0.000	270.228
Current President's Budget	161.199	263.152	298.585	0.000	298.585
Total Adjustments	-5.371	-20.000	28.357	0.000	28.357
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	-20.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-5.371	0.000			
• Other Adjustments	0.000	0.000	28.357	0.000	28.357

Change Summary Explanation

FY22 adjustment for Small Business Innovative Research (SBIR)
 FY23 adjustment of -\$20M is Congressional mark for Program delays
 FY24 increase of \$28.357M for Non-Advocate Cost Assessment

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
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Title: Warhead / Electronic Safe and Arm Fuze (ESAF) Development / System Engineering / Program Management (SEPM)	0.000	4.218	0.000
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Description: Development of a new warhead and ESAF to support AARGM-ER. Will design, test, and certify new warhead/ESAF.

FY 2023 Plans:

Complete working with the USN AARGM-ER Program Office on the warhead/ESAF development, test, integration, and qualification.

FY 2024 Plans:

Work will be completed in FY 2023.

FY 2023 to FY 2024 Increase/Decrease Statement:

Funding decreased because work is projected to be completed in FY2023.

Title: Universal Armament Interface (UAI) / Anti-Radiation Homing (ARH) message / SEPM	0.000	7.118	0.000
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Description: Develop and test a UAI/ARH message set for the AARGM-ER missile.

FY 2023 Plans:

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Complete testing, certification and validation of the UAI/ARH for the AARGM-ER missile. FY 2024 Plans: Work projected to be completed in FY2023. FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreased because work is projected to be completed in FY2023.				
Title: F-35 Integration Description: Integration of the AARGM-ER and SiAW missiles onto the F-35. Efforts for aircraft integration will address the F-35 aircraft software development, Mission Planning capability, engineering to support weapon integration, testing, and airworthiness certification for the missile carriage and employment efforts. FY 2023 Plans: Continue integrating the AARGM-ER on the F-35 as an interim combat capability; includes ground testing, F-35 weapon integration, launcher adapter development and mission planning. FY 2024 Plans: Continue integrating the AARGM-ER on the F-35 as an interim combat capability; includes ground testing, F-35 weapon integration, launcher adapter development and mission planning. Begin integration of the SiAW missiles onto the F-35. FY 2023 to FY 2024 Increase/Decrease Statement: Funding increased due to ramping up integration efforts, to include SiAW missiles as well as AARGM-ER missiles.		5.133	26.574	51.791
Title: SiAW Development Description: Conduct development and testing of discrete SiAW technologies as well as the integrated SiAW weapons system. This includes the development of an initial SiAW capability via the Middle Tier Acquisition described in Section A, as well as a post-MTA activity that will bring additional capability and integrate the weapon onto the F-35. FY 2023 Plans: Continue work on Phase 1 that began in FY22 and proceed to a Preliminary Design Review-like event in a Model Based System Engineering environment by late FY23. Complete acquisition planning for Phase 2 and prepare for a competitive selection in late FY23. FY 2024 Plans: Begin ramp up for Phase 2 competitive selection. FY 2023 to FY 2024 Increase/Decrease Statement:		117.962	163.886	210.031

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Funding increased to cover the cost of ramping up for SiAW Phase 2 development efforts.			
Title: Target/Test Assets, Testing, & Support Description: Provides associated government and contract support for F-35 developmental and operational testing for AARGM-ER and SiAW. Includes required test assets and support, flight test equipment, construction and procurement of targets to meet mission requirements, test wing and range support to include both sea and land ranges, and ground/flight test support. FY 2023 Plans: Continue test support, purchasing test equipment, target construction, range/ground support, and test assets. Continue target/threat emitter acquisition to include weapon cybersecurity support and test investments and development of flight telemetry and termination system. FY 2024 Plans: Complete AARGM-ER test efforts. Begin SiAW missile test support, purchasing test equipment, target construction, range/ground support, and test assets. Continue target/threat emitter acquisition to include weapon cybersecurity support and test investments and development of flight telemetry and termination system. FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreased due to completion of AARGM-ER test activities. SiAW funding will be used to purchase long lead items needed for future years test activities.	38.104	61.356	36.763
Accomplishments/Planned Programs Subtotals	161.199	263.152	298.585

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 0205601N: AARGM-ER (Navy)	120.568	76.314	51.807	-	51.807	26.381	22.264	10.500	9.633	Continuing	Continuing
• MPAF 02 0207328F: Stand-In Attack Weapon	-	77.975	41.947	-	41.947	173.091	149.268	347.445	399.393	7,205.703	8,394.822

Remarks
 RDTE: US Navy AARGM-ER Program Office, Anti-Radiation Missile Improvement Systems Development US Navy appropriation RDT&E 1319.
 MPAF: Funding contained in procurement document utilized to procure initial production lot of AARGM-ER weapons.

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E. Acquisition Strategy

The Stand-in Attack Weapon (SiAW) program will utilize a multi-phase approach to migrate advanced technologies and weapon designs into an Model Based System Engineering (MBSE) environment and then rapidly evolve the designs for an initial capability followed by a more comprehensive capability. The first Phases (1 & 2) have been approved as a Middle Tier of Acquisition (MTA) program, and will focus on the integration of key technologies, the implementation of digital acquisition, a competitive selection, and an initial capability on a surrogate aircraft in less than 5 yrs. In Phase 3, sometimes referred to as the "Post-MTA" phase, the SiAW program plans to transition to a Major Capability Acquisition (MCA) where the capability will be improved and the system will be integrated on the F-35A.

Key tenets of the SiAW program will be the establishment/use of a MBSE environment, implementation of a Weapon Open System Architecture (WOSA), and Agile Software Development.

Air Force plans to continue Navy-led AARGM-ER investments to field an interim combat capability on the F-35.

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

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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			
Warhead / ESAF Development	MIPR	NGDS : Northridge, CA	0.000	0.000	Dec 2021	4.218	Dec 2022	0.000		-		0.000	Continuing	Continuing	-
Universal Armament Interface (UAI) Anti-Radiation Homing message (ARH)	MIPR	Various : Various	0.000	0.000	Dec 2021	7.118	Apr 2023	0.000		-		0.000	Continuing	Continuing	-
KTR SEPM	MIPR	NGDS : Northridge, CA	0.000	0.000	Dec 2021	0.000	Nov 2022	0.000		-		0.000	Continuing	Continuing	-
F-35 Integration	MIPR	Various : Various	0.000	5.143	May 2022	25.324	Aug 2023	51.791	Nov 2023	-		51.791	Continuing	Continuing	-
Mission Planning	MIPR	Various : Various	0.000	0.000	Jun 2022	1.250	Apr 2023	0.000	Jan 2024	-		0.000	Continuing	Continuing	-
Advanced Technology Risk Reduction	MIPR	Various : Various	0.000	0.000	Dec 2021	0.000		0.000		-		0.000	Continuing	Continuing	-
SiAW Development	Various	Various : Various	0.000	109.609	May 2022	141.168	Aug 2023	179.216	Aug 2024	-		179.216	Continuing	Continuing	-
Subtotal			0.000	114.752		179.078		231.007		-		231.007	Continuing	Continuing	N/A

Remarks
Northrop Grumman Defense Systems (NGDS)

Support (\$ 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			
Civ Pay - Direct Cite Authorization (DCA)	Allot	AFLCMC/FZA : Wright Pat, OH	0.000	4.900	Nov 2022	8.966	Oct 2023	10.569	Oct 2024	-		10.569	Continuing	Continuing	-
Subtotal			0.000	4.900		8.966		10.569		-		10.569	Continuing	Continuing	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			
Test Assets AARGM-ER	MIPR	NGDS : Northridge, CA	0.000	27.197	Feb 2022	25.836	Apr 2023	0.000	Jan 2024	-		0.000	Continuing	Continuing	-

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

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FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
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

Warhead & ESAF Development	
Design Warhead & Electronic Safe and Arm Fuze	
UAI / ARH	
Design, Test and validate UAI / ARH message set	
F-35 Integration	
AARGM-ER and SiAW integration on F-35	
SiAW Development	
SiAW Development	
Target & Test Assets, Test, & Support	
Flight test support, range modifications, & targets for AARGM-ER and SiAW	

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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>Warhead & ESAF Development</i>				
Design Warhead & Electronic Safe and Arm Fuze	1	2022	4	2023
<i>UAI / ARH</i>				
Design, Test and validate UAI / ARH message set	1	2022	4	2023
<i>F-35 Integration</i>				
AARGM-ER and SiAW integration on F-35	1	2022	4	2028
<i>SiAW Development</i>				
SiAW Development	3	2022	4	2028
<i>Target & Test Assets, Test, & Support</i>				
Flight test support, range modifications, & targets for AARGM-ER and SiAW	1	2022	4	2028