Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force	Date: March 2024
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0604283F / *Battle Mgmt Com & Ctrl Sensor Development*

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	-	0.000	40.000	100.183	0.000	100.183	10.045	0.000	0.000	0.000	0.000	150.228
673587: *ARSR-4 Replacement - Hawaii*	-	0.000	40.000	100.183	0.000	100.183	10.045	0.000	0.000	0.000	0.000	150.228
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This budget line item funds the replacement of the current Hawaii Air Route Surveillance Radar Version 4 (ARSR-4) to include prototype development, test, site preparation, and installation. The replacement radar will address DoD capability gaps driven by new threats and provide dual use for Hawaii Air Traffic Control (ATC) and weather monitoring. The new system is designated the ARSR-4 Replacement Hawaii (ARSR4R-HI) Long Range Radar (LRR). It is a key component of the USAF's defense of Hawaii as a high priority mission for the DoD and supports NORAD/NORTHCOM and PACAF/INDOPACOM Deterrence Initiatives.

The ARSR4R-HI program is part of an integrated Homeland Defense surveillance against air cruise missiles while maintaining the ATC capability required by both the Federal Aviation Administration (FAA) and the Department of Defense (DoD).

The ARSR4R-HI program is established to address the following surveillance shortfalls:
1. Lack of surveillance capabilities to meet today's mission needs such as inability to characterize and classify targets or cover all required airspace.
2. Inability to scale and update capabilities to pace evolving threats.
3. Obsolescence associated with 1980s era ARSR-4 equipment and infrastructure leading to excessive sustainment, operations, and maintenance costs.

To address these surveillance shortfalls, development of the ARSR4R-HI system will consist of improved detection performance for modern air threats, mitigate new interference sources, and utilize state of the art surveillance technologies and processing capabilities. The ARSR4R-HI effort will solidify the solution as a non-rotating, multi-panel, phased array radar system which provides persistent surveillance with improved accuracy and detection performance supporting an advanced engagement sequence to counter modern threats with target cueing and fire control quality data.

The ARSR4R-HI consists of a ground based radar, associated shelters, and other smaller Government Furnished Equipment (GFE) items. The DoD currently owns the site for the location of the installation and the FAA leases the site.

The FY2025 effort includes the award of two vendor contracts for Rapid Prototype Development and Demonstration followed by down-select to a single vendor for Non-Recurring Engineering (NRE), mature prototype delivery, installation, integration with Command and Control (C2) nodes, and test of the new radar at the Mt. Ka'ala site.

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The current schedule reflects a 4th Qtr FY27 IOC date however, the FY24 new start schedule delay and long lead time for critical components, identified in preliminary market research, may move the IOC date to the right. Final determination of a realistic IOC will be determined upon receipt of vendor demonstration proposals and Integrated Master Schedules in 4th Qtr FY24.

The total cost of the ARSR4R-HI Middle Tier of Acquisition effort is $310.242M, including RDT&E and procurement of prototype unit. ARSR4R-HI is not fully funded across the Future Years Defense Program. The Department of the Air Force is assessing all options to address the funding shortfalls for MTA programs including additional funding in a future budget request, performance trades based on technical maturity, or transition to alternative pathways.

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 FY23, $0.000M was expended for civilian pay expenses in this program element, and in FY24 $2.952M is forecasted for civilian pay expenses in this program element.

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 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	40.000	100.006	0.000	100.006
Current President's Budget	0.000	40.000	100.183	0.000	100.183
Total Adjustments	0.000	0.000	0.177	0.000	0.177
• 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	0.177	0.000	0.177

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: ARSR-4 Replacement Hawaii (ARSR4R-HI)	-	40.000	100.183
Description: The ARSR4R-HI will be the Ground-Based detection, discrimination, and tracking radar to support defense of Hawaii. It will enable integrated fire control and engagement support. It will replace the current ARSR-4 radar located on Mount Ka'ala (4,019 ft in elevation), Oahu, Hawaii. The radar will provide data to multiple DoD and FAA missions simultaneously, including Area Air Defense (AAD), Air Traffic Control (ATC), and Traffic Management. The radar suite will provide capability to			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
process modern threats, provide increased sensitivity using mature state of the art technologies, increase performance in multi-mission operations, provide modularity, flexibility, and growth opportunities. ***FY 2024 Plans:*** FY 24 Funding: - Identifies DOD/FAA key internal/external stakeholders, and manpower requirements. - Develops Memorandum of Agreement (MoA) with DOT FAA to codify program roles and responsibilities. - Completes Requirements Document development to include cyber security with key DoD/FAA stakeholders. - Develops DoD Acquisition Strategy and documents to support the Milestone Decision Authority (MDA) requirements. - Establishes Model Based Systems Engineering environment to develop a Government Reference Architecture (GRA) to optimize open systems architecture of the system chosen. - Initiates spectrum analysis/approval for this system's spectrum band w/DoD Spectrum Office. - Uses the GRA to exercise use case scenarios, to determine capability performance in meeting Key Performance Parameters (KPPs) and Key System Attributes (KSAs). - Conducts interaction with industry to determine mature, open systems architecture solutions that meet requirements. - Develops networking architecture approach for Multi Level Security (MLS) data transmissions. - Identifies radar interfaces to DoD/FAA Command and Control (C2) Nodes. - Prepares / release of request for information to industry for a mature system meeting requirements, schedule, and open systems architecture. - Releases Request for Proposals (RFP) to conduct a demo of capability solutions and execute a preliminary design review. - Transfers funds to FAA for contract award and site-preparation including re-siting of existing antenna farm, re-siting of existing radio shelters, demolition and ground-work for base of tower for new radar (installation pad), design and develop electrical "power-to-port" connection for new radar, design and build cooling system for new radar. ***FY 2025 Plans:*** FY25 efforts: - Will continue all statutory and regulatory efforts with respect to MTA documentation. - Will continue spectrum and cyber certification authority efforts. - Will award two Other Transactional Authority Contracts to two vendors for preliminary design review and a capability demonstration (fly-off). - Will review cost proposals from the two vendors executing the fly-off.			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Will support the capability demonstration (fly-off) test event with coordination of test assets, location, and personnel (46th Test Squadron). - Will score the capability demonstrations (fly-off) and evaluate cost proposals in order to down-select to a single vendor based on best performance for best cost. - Will award FAR Part 15 contract to single contractor for Rapid Prototyping to develop/deliver prototype system consisting of one ground-based primary radar and one secondary radar (beacon) integrated through an electronics suite with the ability to connect to and communicate with appropriate Command & Communications (C2) nodes. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increased funding in FY25 is required to develop, install, and test the prototype system for operational use. $62.286M of the $100.183M in FY25 is for the anticipated purchase price of the prototype hardware with the remaining ~$38M dedicated to ongoing RDT&E.			
Accomplishments/Planned Programs Subtotals	-	40.000	100.183

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

In order to meet the PACAF/INDOPACOM DoD/FAA urgent mission needs, a Middle Tier of Acquisition Rapid Development strategy is planned for the ARSR4R-HI replacement system. The acquisition strategy will include demonstration of two capable systems and down select to a single vendor.

Demonstrations will be conducted utilizing Other Transaction Authority. Following down select, a single FAR Part 15 contract will be awarded to deliver, install, and test the prototype system on Mt. Ka'ala. Other activities in support of this acquisition will be executed via Military Inter-Departmental Purchase Requests (MIPR), and Project Orders with various organizations as required. A FY24 MIPR to FAA will fund site-preparation costs.

This effort is being maintained in the office of Air Force Program Executive Officer (PEO) Digital. Program support, cost, contracts, logistics, and financial management support is managed by Air Force Life Cycle Management Center Aerospace Management Systems Division (AFLCMC/HBA).

Following IOC system sustainment will be provided by two, one-year options for Interim Contractor Support (ICS) in FY28 and FY29. The National Airspace System Defense Program /Long Range Radar Joint Program Office (NAS/LRR JPO) will provide long-term Operations & Sustainment in FY30 and beyond.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604283F / *Battle Mgmt Com & Ctrl Sensor Development*	**Project (Number/Name)** 673587 / *ARSR-4 Replacement - Hawaii*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ARSR-4 Replacement Hawaii Vendor Demonstration A	C/CPFF	AFLCMC/HBA : HAFB, MA	-	-		-		12.000	Dec 2024	-		12.000	0.000	12.000	-
ARSR-4 Replacement Hawaii Vendor Demonstration B	C/CPFF	AFLCMC/HBA : HAFB, MA	-	-		-		12.000	Dec 2024	-		12.000	Continuing	Continuing	-
ARSR-4 Replacement Hawaii Sit Preparation	MIPR	FAA : Michael Monroney Ctr, OK	-	-		27.475	Mar 2024	-		-		-	Continuing	Continuing	-
ARSR-4 Replacement Hawaii Contract Award	C/CPIF	AFLCMC/HBA : HAFB, MA	-	-		-		62.286	Aug 2025	-		62.286	Continuing	Continuing	-
		Subtotal	-	-		27.475		86.286		-		86.286	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	MIPR	DOT FAA : Washington, DC	-	-		6.286	Mar 2024	0.000	Dec 2024	-		0.000	0.000	6.286	-
Research/Analysis	MIPR	DOT FAA / MITRE : Washington, DC	-	-		1.308	Mar 2024	3.043	Dec 2024	-		3.043	0.000	4.351	-
Certifications - Spectrum Certification	MIPR	AFLCMC/EZAC : Wright-Patterson, OH	-	-		-		0.150	Dec 2024	-		0.150	Continuing	Continuing	-
Certifications - Cyber Certification	MIPR	AFLCMC/EZC : Hanscom, MA	-	-		-		0.150	Dec 2024	-		0.150	Continuing	Continuing	-
		Subtotal	-	-		7.594		3.343		-		3.343	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force			Date: March 2024
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604283F / *Battle Mgmt Com & Ctrl Sensor Development*	**Project (Number/Name)** 673587 / *ARSR-4 Replacement - Hawaii*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support	Allot	AFLCMC/HBA : Hanscom AFB, MA	-	-		-		1.448	Dec 2024	-		1.448	Continuing	Continuing	-
Test and Evaluation	PO	46th Test Squadron : Eglin AFB, FL	-	-		0.000	Oct 2023	2.852	Dec 2024	-		2.852	0.000	2.852	-
		Subtotal	-	-		0.000		4.300		-		4.300	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Civilian Direct Cite Authorization	Allot	AFLCMC/FZA: TBD : TBD	-	-		2.952	Mar 2024	3.307	Dec 2024	-		3.307	Continuing	Continuing	-
Program Support Cost (PSC) - Other Government Cost	Allot	AFLCMC/HBA : Hanscom AFB, MA	-	-		0.186	Dec 2023	0.295	Dec 2024	-		0.295	Continuing	Continuing	-
Program Support Cost (PSC) Contractor Services	C/CPAF	Various : Hanscom AFB, MA	-	-		1.793	Mar 2024	2.652	Dec 2024	-		2.652	0.000	4.445	-
		Subtotal	-	-		4.931		6.254		-		6.254	Continuing	Continuing	N/A

	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	-	-		40.000		100.183		-		100.183	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604283F / *Battle Mgmt Com & Ctrl Sensor Development*	**Project (Number/Name)** 673587 / *ARSR-4 Replacement - Hawaii*

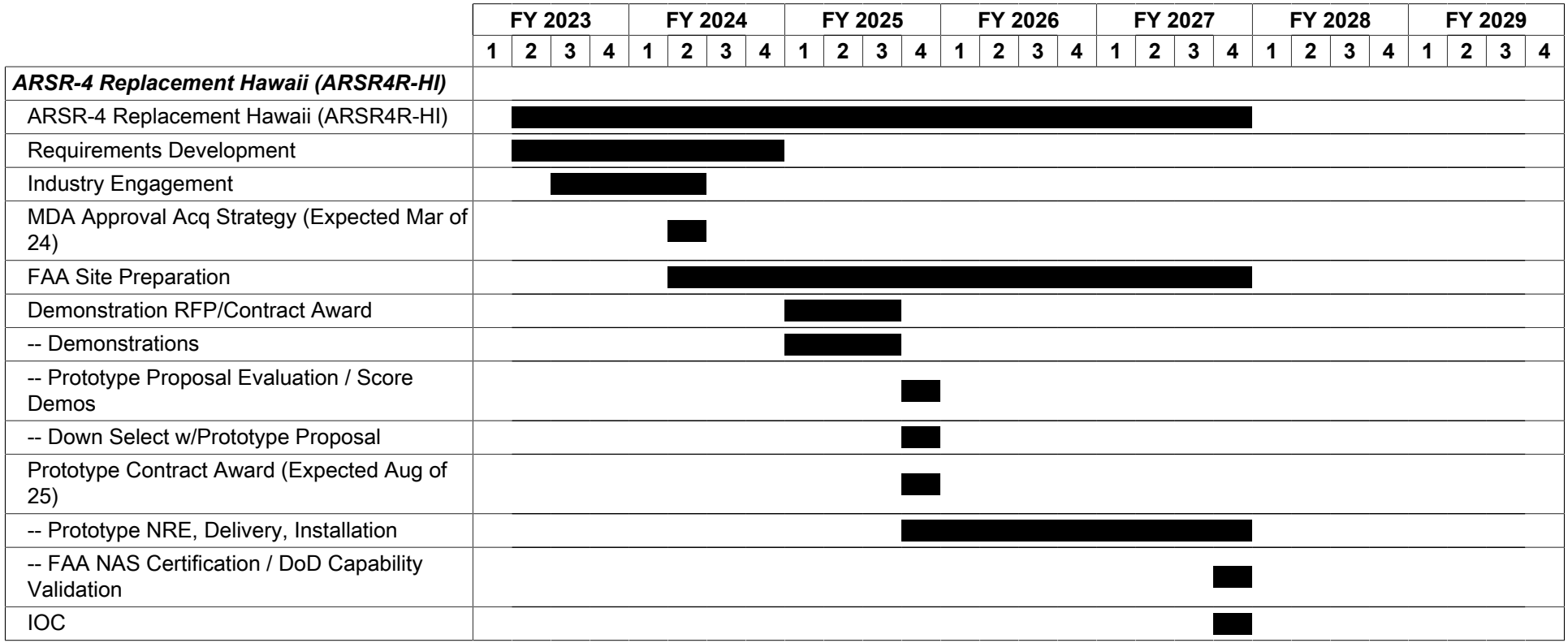

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604283F / *Battle Mgmt Com & Ctrl Sensor Development*	**Project (Number/Name)** 673587 / *ARSR-4 Replacement - Hawaii*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ARSR-4 Replacement Hawaii (ARSR4R-HI)				
ARSR-4 Replacement Hawaii (ARSR4R-HI)	2	2023	4	2027
Requirements Development	2	2023	4	2024
Industry Engagement	3	2023	2	2024
MDA Approval Acq Strategy (Expected Mar of 24)	2	2024	2	2024
FAA Site Preparation	2	2024	4	2027
Demonstration RFP/Contract Award	1	2025	3	2025
-- Demonstrations	1	2025	3	2025
-- Prototype Proposal Evaluation / Score Demos	4	2025	4	2025
-- Down Select w/Prototype Proposal	4	2025	4	2025
Prototype Contract Award (Expected Aug of 25)	4	2025	4	2025
-- Prototype NRE, Delivery, Installation	4	2025	4	2027
-- FAA NAS Certification / DoD Capability Validation	4	2027	4	2027
IOC	4	2027	4	2027