

UNCLASSIFIED

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 0303133F / <i>High Frequency Radio Systems</i>
--	---

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	0.000	40.000	0.000	40.000	0.000	0.000	0.000	0.000	0.000	40.000
675046: <i>Systems Engineering & Integration</i>	-	0.000	0.000	40.000	0.000	40.000	0.000	0.000	0.000	0.000	0.000	40.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This budget line funds the Airborne High Frequency Radio Modernization (AHFRM) Middle Tier of Acquisition (MTA) program. The program is designed to replace existing legacy AN/ARC-190 High Frequency (HF) radios with a modernized HF radio, the AN/ARC-260. This replacement radio provides digital, software defined HF capability for 1,300 aircraft (most of which require multiple AN/ARC-260s) across 14 distinct Global Strike, Military Airlift (MAF) and refueling platforms within the US Air Force, US Navy, and US Coast Guard.

The AN/ARC-190 is end-of-life and is currently the only HF radio capability within these 14 aircraft platforms. It is anticipated the AN/ARC-190 radio will fall below supply chain thresholds beginning in FY23. This Federal Aviation Administration (FAA) Minimum Equipment Listing (MEL) requires a secure Long-Range Communication System (LRCS) on all aircraft performing transoceanic flights, and therefore, will ground any aircraft without this capability. Without the completion of the AHFRM program, any aircraft platform without a functioning LRC radio will be unable to perform any transoceanic flight until a replacement radio is procured outside of current supply chain reserves. The replacement AN/ARC-260 radio is the only Air Force airborne HF digital radio in development to address this anticipated capability gap.

Impacted aircraft include AC-130J, B-1, B-52, C-5, C-17, C-130J, E-3, E-4B, E-6B, EC-130J, HC-130J, KC-130H, KC-135, and MC-130J.

The new AN/ARC-260 radio provides critical long-range HF communications when satellite communications are unavailable due to nature and/or man-made disruptions. It will incorporate new technologies such as 3G/4G Automatic Link Establishment and Low Probability of Intercept/Detection/Geolocation features, as well as accommodate the development of new technologies through software upgrades and open architecture. Finally, the AN/ARC-260 radio will be critical in providing a survivable/secure communications path.

FY24 funding supports the completion of the MTA rapid prototyping phase and minimizes any negative impact resulting from asset availability. The AHFRM program began in FY19 and is currently at the end of its rapid prototyping phase, having successfully developed a capable prototype. FY24 funding efforts include prototype maturation, test asset development, developmental and operational testing (DT/OT), and production readiness activities required to transition into a Major Capability Acquisition (MCA) program.

The AHFRM program received FY19 and FY20 funding to begin its rapid prototyping efforts. In FY22, the Survivable Airborne Operations Center (SAOC) program (PE 0604288F) provided 38.2M FY22 funding to continue AHFRM program development. The SAOC FY22 PB supports use of RDT&E funds for external subsystems that

UNCLASSIFIED

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 0303133F / <i>High Frequency Radio Systems</i>
--	---

heavily impact their technical baseline. The AHFRM program directly supports SAOC derived requirements and meets bona fide need requisites for FY22 work. Because the program received FY22 funding through the SAOC program, this program is not considered a New Start due to the Skip Rule.

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, and 0606398F. In FY22 0.000M was expended for civilian pay expenses in this program element, and in FY23 0.000M is forecasted for civilian pay expenses in this program element.

The total cost of the Airborne HF Radio Modernization Middle Tier of Acquisition effort is 156.01 million, including RDT&E. The Airborne HF Radio Modernization is fully funded across the Future Years Defense Program.

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	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	40.000	0.000	40.000
Total Adjustments	0.000	0.000	40.000	0.000	40.000
• 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	0.000	0.000			
• Other Adjustments	0.000	0.000	40.000	0.000	40.000

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Title: High Frequency Radio System	0.000	0.000	40.000
Description: Development of High Frequency Radio System			
FY 2023 Plans: N/A			
FY 2024 Plans: Activities supported with FY24 funding include, but are not limited to the following:			

UNCLASSIFIED

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 0303133F / <i>High Frequency Radio Systems</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Will complete radio prototype - Will develop production representative test assets for aircraft integration - Will complete test readiness and perform Operational Testing - Will publish test results and final reports to appropriate stakeholders in support of decision reviews and certification of asset readiness - Will garner fielding strategy approval <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase due to contract close-out activities to support completion of ARC-260 radio development. With FY24 funding, program will complete development of prototypes, perform operational and development testing and prepare fielding activities. The ARC-260 replaces 2500 AN/ARC-190 High Frequency end-of-life radios that provide assured communication in a satellite denied or heavily contested environment.</p>				
Accomplishments/Planned Programs Subtotals		0.000	0.000	40.000
D. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
Major Thrust - Program received FY22 funding (\$38.2M) from the SAOC program (PE 0604288F) to continue development.				
Because the program received FY22 funding through the SAOC program, this program is not considered a New Start due to the Skip Rule.				
E. Acquisition Strategy				
The Service Acquisition Executive (SAE) designated the AHFRM program a MTA Rapid Prototyping effort on 4 Sep 2018. To date, the program completed a competitive rapid prototyping effort and awarded a 5-year/\$176M pre/post-production contract to BAE Systems in December 2021. AHFRM is tentatively scheduled to transition from an MTA to an MCA program in 2024.				
The Milestone Decision Authority for the AHFRM program is the Air Force Program Executive Officer - Agile Combat Support. Program management for the AHFRM program is located at Robins AFB, GA. The Air Force Life Cycle Management Center - Combat Avionics Division (AFLCMC/WNX) provides contracting, legal, comptroller, programmatic, engineering, test, and logistics support.				

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 0303133F / High Frequency Radio Systems	Project (Number/Name) 675046 / Systems Engineering & Integrations
--	--	---

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			
Prototype Maturation	C/FFP	Not specified. : TBD	-	-		-		6.300	Nov 2023	-		6.300	0.000	6.300	-
Product Readiness	C/FFP	Not specified. : TBD	-	-		-		11.000	Nov 2023	-		11.000	0.000	11.000	-
Subtotal			-	-		-		17.300		-		17.300	0.000	17.300	N/A

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			
Sustainment Planning	C/FFP	Not specified. : TBD	-	-		-		2.500	Nov 2023	-		2.500	0.000	2.500	-
Data Capture	C/FFP	Not specified. : TBD	-	-		-		2.100	Nov 2023	-		2.100	0.000	2.100	-
Subtotal			-	-		-		4.600		-		4.600	0.000	4.600	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			
Operational Test	PO	Not specified. : TBD	-	-		-		2.600	Nov 2023	-		2.600	0.000	2.600	-
Test Assets	C/CPAF	Not specified. : TBD	-	-		-		5.500	Mar 2024	-		5.500	0.000	5.500	-
Subtotal			-	-		-		8.100		-		8.100	0.000	8.100	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			
Program Support Costs	C/FFP	Not specified. : TBD	-	-		-		10.000	Nov 2023	-		10.000	0.000	10.000	-
Subtotal			-	-		-		10.000		-		10.000	0.000	10.000	N/A

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 0303133F / High Frequency Radio Systems			Project (Number/Name) 675046 / Systems Engineering & Integrations					
	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	-	-	-	40.000	-	40.000	0.000	40.000	N/A		

Remarks

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0303133F / <i>High Frequency Radio Systems</i>	Project (Number/Name) 675046 / <i>Systems Engineering & Integration</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>High Frequency Radio System</i>				
Product Development	1	2022	4	2024
Support	1	2023	4	2024
Test and Evaluation	1	2023	4	2024
Management Services	1	2023	4	2024