Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-421

Airborne & Maritime/Fixed Station Joint Tactical Radio System (AMF JTRS)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Sensitivity Originator

No originator info Available at this time.

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name
Airborne & Maritime/Fixed Station Joint Tactical Radio System (AMF JTRS)

DoD Component
Army

Responsible Office

COL James Ross
6007 Surveillance Loop
Aberdeen Proving Ground, MD 21005

james.p.ross2.mil@mail.mil

Phone: 443-395-2669
Fax: 443-395-7680
DSN Phone: 648-2669
DSN Fax: 648-7680
Date Assigned: August 19, 2014

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 17, 2008

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated May 1, 2014

Mission and Description

Airborne & Maritime/Fixed Station Joint Tactical Radio System (AMF JTRS) products are software programmable, multiband, multi-mode, mobile ad hoc networking radios providing simultaneous voice and data communications for Army aviation platforms. The radios will operate in networks supporting the Common Operational Picture, situational awareness and interoperability of Mission Command systems throughout the battlefield. AMF must ensure the Soldier's ability to communicate both horizontally and vertically via voice and data within all mission areas and Combat Operational Environments. AMF helps close capability gaps by extending data networking to company echelons and below, enabling network services to the platform and connecting Army aviation platforms to Army ground and Joint air network domains. Per MDA direction, the restructured AMF program will procure radios as Non-Developmental Items.

AMF will procure the Small Airborne Networking Radio (SANR). The SANR is a two-channel, software-defined, National Security Agency Type 1 certified networking radio providing seamless real-time information for operation in mobile and dynamic combat environments that will meet tactical communications requirements as validated by the Army aviation community. SANR will provide increased data throughput to Army aviation platforms via advanced networking capabilities supporting Mid-Tier and Lower Tier tactical networks and maintain Single Channel Ground and Airborne Radio System (SINCGARS) capability. SANR will replace the current SINCGARS ARC-201D radios on Army aviation platforms (reconnaissance, attack, cargo and utility). SANR is planned for implementation on the following platforms: Apache (AH-64E), Black Hawk (UH-60V, UH-60M, HH-60M and MH-60M), Chinook (CH-47F and MH-47G) and Gray Eagle Unmanned Aircraft System (MQ-1C). SANR will enhance and further enable the ability of the maneuver commander to integrate and synchronize aviation forces with land based operational forces. SANR, employed on Army aviation platforms, will enable aviation combat elements (Combat Aviation Brigades, Theater Aviation Brigades and Special Operations Aviation Regiment) to better utilize the inherent versatility of airborne communications as a complement to the unique capabilities of the other combat arms. SANR will give commanders enhanced situational awareness and mission command in a package that provides a more responsive means of directing aircraft to match changing maneuver force situations and missions.

Executive Summary

Program Highlights Since Last Report

The Army is evaluating network components to reduce vulnerabilities and focus on solutions needed to address capability gaps. AMF Small Airborne Networking Radio (SANR), and all other network components, are currently being assessed in an effort to enhance, adjust and modernize the Army's entire network as we address today's requirements as well as emerging threats. Therefore, the Army cannot certify that requirements are stable for this program in accordance with section 2430(4)(A) of title 10, U.S. Code.

The SANR requirement path forward is expected to evolve based on outcomes of the Army's evaluation of network components. The Army is contemplating cancellation of the SANR program; emerging Army airborne communications needs would be met by establishing a new acquisition program when requirements are solidified.

Since the previous SAR, the AMF SANR program experienced schedule slips due to a series of network and waveform evaluations and assessments that delayed approval of the SANR CPD. These delays result in changes to the SANR program major milestones as reflected in the Schedule Events Current Estimate. The revised schedule estimate for SANR triggers a deviation to FRP and IOC schedule thresholds established in the May 2014 APB. A Program Deviation Report is in process. The Army Requirements Oversight Council review of the SANR CPD is scheduled for April 2018. An update to the AMF APB is planned upon approval of the SANR CPD.

The updated total of 7,200 SANR (14,400 channels) reported in this SAR reflects an increase of 186 production radios (372 channels) over the quantity in the last SAR. The reported Procurement funded quantities are based on Army requirements as of October 2017 and are a result of Army Acquisition Objective increases to the Apache and Gray Eagle platforms of 154 and 32 radios respectively.

On November 1, 2017, the USD(AT&L) ADM delegated milestone decision authority for the SANR program to the Secretary of the Army and designated SANR as ACAT IC.

There are no significant software-related issues with this program at this time.

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	**Significant Development Description**
February 2005	All Joint Tactical Radio Systems (JTRS) programs were re-aligned under the Joint PEO (JPEO) JTRS.
March 2008	Milestone B Decision and a contract was awarded to Lockheed Martin Corporation for System Design and Demonstration (SDD).
November 2009	AMF JTRS system level Critical Design Review was completed on November 25, 2009.
December 2010	AMF JTRS reported threshold schedule breaches to the October 8, 2008, APB. The breaches weredue to schedule delays as a result of an unresolved Congressional Mark amounting to one-quarter of the contractor's FY 2011 allocated budget.
September 2011	USD(AT&L) issued an ADM directing the delay of the Maritime/Fixed (M/F) form factor and requesting that the JROC reconsider the M/F requirement.
May 2012	USD(AT&L) issued an ADM approving the Army recommendation to execute a smart closeout of all remaining efforts under the current AMF SDD contract.
July 2012	MDA directed AMF to execute a modified Non-developmental Item (NDI) acquisition strategy in order to leverage the Government's prior investment and to conduct a full and open competition for a two-channel small airborne modified NDI radio capable of addressing requirements as validated by the user community.
July 2012	USD(AT&L) ADM directed JPEO JTRS organizational restructure and realignment of mission responsibilities, including transitioning AMF to the Army by the end of FY 2012.
August 2012	The Army directed the alignment of AMF under PEO Command Control and Communications Tactical.
May 2013	USD(AT&L) approved theplan to split AMF into two separate subprograms, Small Airborne Link 16 Terminal (SALT) and Small Airborne Networking Radio (SANR).
March 2014	The FY 2015 PB reduced AMF funding by 73% in RDT&E and 85% in Procurement for FY 2015 through FY 2019.
May 2014	APB Change 1 approved on 1 May 2014.
May 2014	On May 2, 2014, USD(AT&L) issued an ADM designating SALT and SANR as subprograms within the AMF JTRS Program. ADM identifies MDA for SANR as the DAE, while MDA for SALT is delegated to the Army Acquisition Executive.
February 2015	PB 2016 restores SANR funding beginning in FY 2016 based on Network Capability Review.
August 2015	The SALT MDA issued an ADM directing an orderly close out of the SALT subprogram.
September 2015	RDT&E APB threshold breach reported in an Exception SAR. The deviation isdue to sunk cost transfer from the SALT to SANR subprogram at SALT closeout, as well as reinstatement of SANR RDT&E funding.
October 2016	SANR acquisition activities resumed in FY 2016.
December 2016	Army network evaluation to address capability gaps and reduce vulnerabilities includes SANR. AMF SANR, and all other network components, are being assessed in an effort to enhance, adjust and modernize the Army network and address today's requirements as well as emerging threats.
November 2017	USD(AT&L) delegated milestone decision authorityfor SANR to the Secretary of the Army and designated SANR ACAT IC.

Threshold Breaches

APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☑
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Explanation of Breach

AMF deviated from its FRP and IOC APB schedule thresholds. This deviation is a result of delays in staffing and approval of the Small Airborne Networking Radio (SANR) CPD. An update to the AMF APB to reflect these changes is planned upon approval of the SANR CPD.

A Program Deviation Report (PDR) for the SANR APB schedule threshold deviation is in process.

The RDT&E Cost deviation was previously reported in the September 2015 SAR. A PDR was submitted to the MDA in January 2016.

Schedule

Schedule Events					
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	
Milestone B Decision	Dec 2007	Mar 2008	Mar 2008	Mar 2008	
Contract Award	Feb 2008	Nov 2021	May 2022	May 2020	(Ch-1)
Milestone C Decision	Nov 2011	Oct 2022	Apr 2023	Dec 2022	(Ch-1)
FRP	Jul 2014	Jun 2023	Dec 2023	**Aug 2024**[1]	(Ch-1)
IOC	Aug 2014	Apr 2026	Oct 2026	**Nov 2026**[1]	(Ch-1)

[1] *APB Breach*

Change Explanations

(Ch-1) The Contract Award Current Estimate changed from October 2019 to May 2020, Milestone C changed from March 2022 to December 2022, FRP changed from October 2023 to August 2024 and IOC changed from July 2024 to November 2026 as a result of delays in SANR CPD approval, ultimately resulting in changes to the SANR program major milestones.

Performance

Performance Characteristics				
SAR Baseline Development Estimate	**Current APB Development Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
Have an internal growth capability				
Open system architecture IAW DISR; Modular, Scaleable, Flexible Form Factors	Open system architecture IAW DISR; Modular, Scaleable, Flexible Form Factors	Open system architecture IAW DISR; Modular, Scaleable, Flexible Form Factors	TBD	N/A
JTR set modes / capabilities configuration and reconfiguration via software				
By operators in their operational environment	By operators in their operational environment	By operators in their operational environment	TBD	N/A
Multi-channel routing and retransmission				
Objective waveforms that are same in mode (voice, data, or video) and use like data rates and operate at permissible security classification levels	Objective waveforms that are same in mode (voice, data, or video) and use like data rates and operate at permissible security classification levels	KPP waveforms that are same in mode (voice, data, or video) and use like data rates and operate at permissible security classification levels	TBD	N/A
Support waveforms.				
Maritime / Fixed: Same as Threshold. Small Airborne: Threshold plus UHF SATCOM, SINCGARS, Havequick II, EPLRS	Maritime / Fixed: Same as Threshold. Small Airborne: Threshold plus UHF SATCOM, SINCGARS, Havequick II, EPLRS	Maritime / Fixed: UHF SATCOM, MUOS. Small Airborne: MUOS, SRW, WNW, Link 16	TBD	N/A
To operate on designated number of channels at the same time.				
Small Airborne: 10 channels. Maritime / Fixed (full duplex): 10 channels	Small Airborne: 10 channels. Maritime / Fixed (full duplex): 10 channels	Small Airborne: 2 channels. Maritime / Fixed (full duplex): 4 channels	TBD	N/A
Scaleable networking services				
All domains	All domains	All domains	TBD	N/A
Network extension / coverage				
Across organizational boundaries	Across organizational boundaries	Across organizational boundaries	TBD	N/A
JTR system network interoperability				
Interoperate with Allied / Coalition and commercial networks; satisfy 100% of top -level IER	Interoperate with Allied / Coalition and commercial networks; satisfy 100% of top-level IER	Interoperate with Service and Joint networks; satisfy 100% of critical top-level IERs	TBD	N/A
Sustainment - Operational Availability (Ao)				
0.99 (channel)	0.99 (channel)	0.96 (channel)	TBD	N/A

Requirements Reference

JTRS ORD Increment 1 Version 3.2 dated April 9, 2003 / v.3.2.1 errata dated August 28, 2006 and as modified by JROC Memorandum 063-11 dated April 29, 2011

Change Explanations

None

Notes

The current APB represents the post-Milestone B Acquisition Strategy. The Draft SANR CPD differs significantly from the previous JTRS ORD 3.2 and is pending Army Requirements Oversight Council approval.

Acronyms and Abbreviations

DISR - Department of Defense (DoD) Information Technology Standards Registry
EPLRS - Enhanced Position Location Reporting System
IAW - In Accordance With
IER - Information Exchange Requirement
JTR - Joint Tactical Radio
MUOS - Mobile User Objective System
SATCOM - Satellite Communications
SINCGARS - Single Channel Ground and Airborne Radio System
SRW - Soldier Radio Waveform
UHF - Ultra High Frequency
WNW - Wideband Networking Waveform

Track to Budget

RDT&E

Appn		BA	PE	
Navy	1319	05	0604280N	
	Project		**Name**	
	3073		AMF JTRS	(Sunk)
Army	2040	05	0604280A	
	Project		**Name**	
	162		Joint Tactical Radio / Network Enterprise Domain	(Sunk)
Army	2040	05	0605380A	
	Project		**Name**	
	EA9		Airborne Maritime Fixed Small Airborne (AMF-SA)	(Sunk)
	EG6		Small Airborne Networking Radio (SANR)	
Air Force	3600	05	0604280F	
	Project		**Name**	
	655068		Joint Tactical Radio System (JTRS)	(Sunk)

Procurement

Appn		BA	PE	
Army	2035	02	0204380A	
	Line Item		**Name**	
	B90902		AMF JTRS	(Sunk)
	B90904		AMF JTRS	

Notes

B90900 is the parent Line Item number to B90902 and B90904.

Acq O&M

Appn		BA	PE	
Army	2020	04	0702806A	
	Subactivity Group		**Name**	
	435		Acquisition and Management Support: Tactical Radios	(Shared)

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2008 $M			BY 2008 $M	TY $M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	1681.6	1256.2	1381.8	1484.4[1]	1764.2	1279.1	1532.4
Procurement	5459.7	1387.1	1525.8	1421.7	6569.8	2092.1	2024.2
Flyaway	--	--	--	1170.1	--	--	1665.7
Recurring	--	--	--	1170.1	--	--	1665.7
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	251.6	--	--	358.5
Other Support	--	--	--	139.0	--	--	198.3
Initial Spares	--	--	--	112.6	--	--	160.2
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	15.3	0.0	0.0	20.9
Total	7141.3	2643.3	N/A	2921.4	8334.0	3371.2	3577.5

[1] *APB Breach*

Current APB Cost Estimate Reference

Program Office Estimate aligned with FY 2015 President's Budget dated March 04, 2014

Cost Notes

Army SANR integration and installation requirements on host platforms are covered under Aviation Mission Equipment and are not AMF funded.

In accordance with section 842 of the National Defense Authorization Act for FY 2017, which amended title 10 U.S.C. § 2334, the Director of Cost Assessment and Program Evaluation, and the Secretary of the military department concerned or the head of the Defense Agency concerned, must issue guidance requiring a discussion of risk, the potential impacts of risk on program costs, and approaches to mitigate risk in cost estimates for MDAPs and major subprograms. The information required by the guidance is to be reported in each SAR. This guidance is not yet available; therefore, the information on cost risk is not contained in this SAR.

Beginning in FY 2019, the Army realigned direct civilian personnel pay costs from RDT&E and Procurement investment accounts to O&M to provide additional transparency and auditability.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	204	192	220
Procurement	24920	14060	14180
Total	25124	14252	14400

Quantity Notes

AMF PAUC and APUC units of measure are per channel. Quantities are channels with the assumption of two channels per radio.

The procurement quantities are based on current Army requirements of 7,090 SANR (14,180 channels). This reflects an increase of 186 radios (372 channels) over the quantity in the December 2016 SAR. This change is a result of Army Acquisition Objective increases to the Apache and Gray Eagle platforms of 154 and 32 radios respectively.

RDT&E quantity of 110 radios (220 channels) reflect 73 planned deliveries to the Army for integration onto platforms and 37 radios required for Government testing.

Cost and Funding

Funding Summary

Appropriation Summary FY 2019 President's Budget / December 2017 SAR (TY$ M)									
Appropriation	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
RDT&E	1420.0	9.0	16.0	43.5	8.9	9.0	0.0	26.0	1532.4
Procurement	0.0	0.0	0.0	9.9	67.0	141.2	168.6	1637.5	2024.2
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.9	0.9	1.8	1.8	1.8	13.7	20.9
PB 2019 Total	1420.0	9.0	16.9	54.3	77.7	152.0	170.4	1677.2	3577.5
PB 2018 Total	1431.1	9.0	44.9	90.7	83.6	85.0	241.5	1471.1	3456.9
Delta	-11.1	0.0	-28.0	-36.4	-5.9	67.0	-71.1	206.1	120.6

Funding Notes

Starting in FY 2014, all AMF RDT&E funding resides in Army PE 0605380A.

The $26.0M in the RDT&E "To Complete" column reflects additional funding needed through FY 2024 to support test efforts.

Delays to Small Airborne Networking Radio CPD approval shifted requirements to the right. The FY 2019 PB provides Procurement funding of $9.9M in FY 2020, $67.0M in FY 2021 and $141.2M in FY 2022 to procure radios, however procurement buys are delayed until FY 2023 due to Milestone C slipping 10 months from March 2022 to December 2022. AMF is working with the Army to realign funding based on revised schedule and anticipates correction in the next budget cycle. Until funding is realigned, Procurement quantity buys reflected in this SAR align with funding provided.

Quantity Summary FY 2019 President's Budget / December 2017 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Development	220	0	0	0	0	0	0	0	0	220
Production	0	0	0	0	90	608	1256	1198	11028	14180
PB 2019 Total	220	0	0	0	90	608	1256	1198	11028	14400
PB 2018 Total	220	0	0	0	524	596	464	1724	10500	14028
Delta	0	0	0	0	-434	12	792	-526	528	372

Cost and Funding

Annual Funding By Appropriation

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	--	--	--	--	--	--	8.4
2004	--	--	--	--	--	--	43.0
2005	--	--	--	--	--	--	54.3
2006	--	--	--	--	--	--	55.9
2007	--	--	--	--	--	--	53.5
2008	--	--	--	--	--	--	99.3
2009	--	--	--	--	--	--	212.0
2010	--	--	--	--	--	--	306.5
2011	--	--	--	--	--	--	303.2
2012	--	--	--	--	--	--	108.6
2013	--	--	--	--	--	--	9.1
Subtotal	--	--	--	--	--	--	1253.8

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2008 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	--	--	--	--	--	--	9.4
2004	--	--	--	--	--	--	47.0
2005	--	--	--	--	--	--	57.8
2006	--	--	--	--	--	--	57.7
2007	--	--	--	--	--	--	53.9
2008	--	--	--	--	--	--	98.3
2009	--	--	--	--	--	--	207.1
2010	--	--	--	--	--	--	295.0
2011	--	--	--	--	--	--	285.0
2012	--	--	--	--	--	--	100.4
2013	--	--	--	--	--	--	8.3
Subtotal	--	--	--	--	--	--	1219.9

Annual Funding 2040 | RDT&E | Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	--	--	--	--	--	--	8.0
2017	--	--	--	--	--	--	4.1
2018	--	--	--	--	--	--	9.0
2019	--	--	--	--	--	--	16.0
2020	--	--	--	--	--	--	43.5
2021	--	--	--	--	--	--	8.9
2022	--	--	--	--	--	--	9.0
2023	--	--	--	--	--	--	--
2024	--	--	--	--	--	--	26.0
Subtotal	220	--	--	--	--	--	124.5

Annual Funding 2040 | RDT&E | Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	BY 2008 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	--	--	--	--	--	--	7.0
2017	--	--	--	--	--	--	3.5
2018	--	--	--	--	--	--	7.6
2019	--	--	--	--	--	--	13.3
2020	--	--	--	--	--	--	35.5
2021	--	--	--	--	--	--	7.1
2022	--	--	--	--	--	--	7.1
2023	--	--	--	--	--	--	--
2024	--	--	--	--	--	--	19.6
Subtotal	220	--	--	--	--	--	100.7

Annual Funding 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	--	--	--	--	--	--	12.8
2004	--	--	--	--	--	--	28.1
2005	--	--	--	--	--	--	36.1
2006	--	--	--	--	--	--	77.1
Subtotal	--	--	--	--	--	--	154.1

Annual Funding 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2008 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	--	--	--	--	--	--	14.4
2004	--	--	--	--	--	--	30.8
2005	--	--	--	--	--	--	38.6
2006	--	--	--	--	--	--	80.0
Subtotal	--	--	--	--	--	--	163.8

Annual Funding 2035 | Procurement | Other Procurement, Army							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2020	90	9.0	--	--	9.0	0.9	9.9
2021	608	60.8	--	--	60.8	6.2	67.0
2022	1256	128.2	--	--	128.2	13.0	141.2
2023	1198	136.1	--	--	136.1	32.5	168.6
2024	1220	135.7	--	--	135.7	43.7	179.4
2025	1220	138.0	--	--	138.0	55.7	193.7
2026	1200	138.1	--	--	138.1	25.0	163.1
2027	1160	136.0	--	--	136.0	25.4	161.4
2028	1120	134.2	--	--	134.2	25.5	159.7
2029	1120	136.8	--	--	136.8	25.9	162.7
2030	1080	134.6	--	--	134.6	26.1	160.7
2031	1080	137.4	--	--	137.4	25.9	163.3
2032	1052	136.5	--	--	136.5	26.8	163.3
2033	776	104.3	--	--	104.3	21.9	126.2
2034	--	--	--	--	--	4.0	4.0
Subtotal	14180	1665.7	--	--	1665.7	358.5	2024.2

Annual Funding 2035 | Procurement | Other Procurement, Army							
Fiscal Year	Quantity	BY 2008 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2020	90	7.3	--	--	7.3	0.7	8.0
2021	608	48.1	--	--	48.1	4.9	53.0
2022	1256	99.4	--	--	99.4	10.1	109.5
2023	1198	103.5	--	--	103.5	24.7	128.2
2024	1220	101.2	--	--	101.2	32.6	133.8
2025	1220	100.9	--	--	100.9	40.7	141.6
2026	1200	99.0	--	--	99.0	17.9	116.9
2027	1160	95.6	--	--	95.6	17.8	113.4
2028	1120	92.4	--	--	92.4	17.6	110.0
2029	1120	92.4	--	--	92.4	17.5	109.9
2030	1080	89.1	--	--	89.1	17.3	106.4
2031	1080	89.2	--	--	89.2	16.8	106.0
2032	1052	86.9	--	--	86.9	17.0	103.9
2033	776	65.1	--	--	65.1	13.6	78.7
2034	--	--	--	--	--	2.4	2.4
Subtotal	14180	1170.1	--	--	1170.1	251.6	1421.7

Annual Funding 2020 | Acq O&M | Operation and Maintenance, Army	
Fiscal Year	TY $M Total Program
2019	0.9
2020	0.9
2021	1.8
2022	1.8
2023	1.8
2024	2.3
2025	1.2
2026	1.2
2027	1.2
2028	1.2
2029	1.3
2030	1.3
2031	1.3
2032	1.3
2033	1.4
Subtotal	20.9

Annual Funding 2020 | Acq O&M | Operation and Maintenance, Army	
Fiscal Year	BY 2008 $M
	Total Program
2019	0.8
2020	0.7
2021	1.4
2022	1.4
2023	1.4
2024	1.7
2025	0.9
2026	0.9
2027	0.9
2028	0.8
2029	0.9
2030	0.9
2031	0.9
2032	0.8
2033	0.9
Subtotal	15.3

Low Rate Initial Production

Small Airborne Networking Radio has no LRIP requirement at this time; an LRIP request is anticipated at Milestone C.

Foreign Military Sales

None

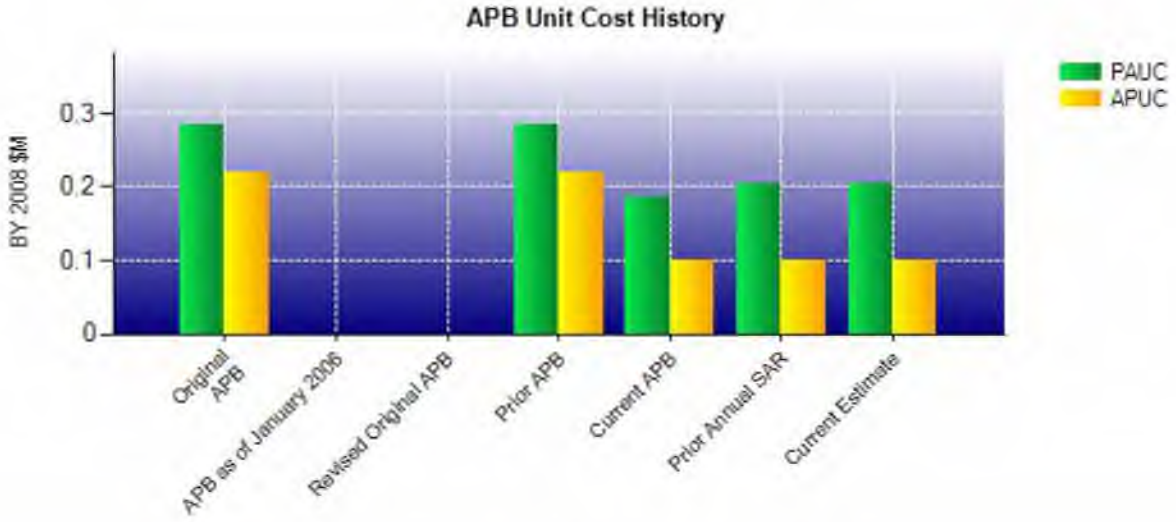
Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2008 $M Current UCR Baseline (May 2014 APB)	BY 2008 $M Current Estimate (Dec 2017 SAR)	% Change
Program Acquisition Unit Cost			
Cost	2643.3	2921.4	
Quantity	14252	14400	
Unit Cost	0.185	0.203	+9.73
Average Procurement Unit Cost			
Cost	1387.1	1421.7	
Quantity	14060	14180	
Unit Cost	0.099	0.100	+1.01

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2008 $M Original UCR Baseline (Oct 2008 APB)	BY 2008 $M Current Estimate (Dec 2017 SAR)	% Change
Program Acquisition Unit Cost			
Cost	7141.3	2921.4	
Quantity	25124	14400	
Unit Cost	0.284	0.203	-28.52
Average Procurement Unit Cost			
Cost	5459.7	1421.7	
Quantity	24920	14180	
Unit Cost	0.219	0.100	-54.34



APB Unit Cost History					
Item	Date	BY 2008 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Oct 2008	0.284	0.219	0.332	0.264
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Oct 2008	0.284	0.219	0.332	0.264
Current APB	May 2014	0.185	0.099	0.237	0.149
Prior Annual SAR	Dec 2016	0.204	0.099	0.246	0.140
Current Estimate	Dec 2017	0.203	0.100	0.248	0.143

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.332	-0.006	0.062	0.019	0.001	-0.186	0.000	0.026	-0.084	0.248

Current SAR Baseline to Current Estimate (TY $M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.264	-0.005	0.016	0.028	0.000	-0.186	0.000	0.026	-0.121	0.143

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	Dec 2007	N/A	Mar 2008
Milestone C	N/A	Nov 2011	N/A	Dec 2022
IOC	N/A	Aug 2014	N/A	Nov 2026
Total Cost (TY $M)	N/A	8334.0	N/A	3577.5
Total Quantity	N/A	25124	N/A	14400
PAUC	N/A	0.332	N/A	0.248

Cost Variance

Summary TY $M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Development Estimate)	1764.2	6569.8	--	--	8334.0
Previous Changes					
Economic	-24.4	-49.1	--	--	-73.5
Quantity	-27.6	-2726.3	--	--	-2753.9
Schedule	-139.9	+357.2	--	--	+217.3
Engineering	+12.3	--	--	--	+12.3
Estimating	-54.3	-2551.3	--	--	-2605.6
Other	--	--	--	--	--
Support	--	+326.3	--	--	+326.3
Subtotal	-233.9	-4643.2	--	--	-4877.1
Current Changes					
Economic	-1.3	-16.7	--	--	-18.0
Quantity	--	+119.7	--	--	+119.7
Schedule	+8.9	+41.0	--	--	+49.9
Engineering	--	--	--	--	--
Estimating	-5.5	-93.1	--	+20.9	-77.7
Other	--	--	--	--	--
Support	--	+46.7	--	--	+46.7
Subtotal	+2.1	+97.6	--	+20.9	+120.6
Total Changes	-231.8	-4545.6	--	+20.9	-4756.5
CE - Cost Variance	1532.4	2024.2	--	20.9	3577.5
CE - Cost & Funding	1532.4	2024.2	--	20.9	3577.5

Summary BY 2008 $M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Development Estimate)	1681.6	5459.7	--	--	7141.3
Previous Changes					
Economic	--	--	--	--	--
Quantity	-25.5	-2301.2	--	--	-2326.7
Schedule	-140.4	+19.4	--	--	-121.0
Engineering	+11.0	--	--	--	+11.0
Estimating	-42.0	-2031.0	--	--	-2073.0
Other	--	--	--	--	--
Support	--	+224.5	--	--	+224.5
Subtotal	-196.9	-4088.3	--	--	-4285.2
Current Changes					
Economic	--	--	--	--	--
Quantity	--	+74.7	--	--	+74.7
Schedule	+5.1	+7.0	--	--	+12.1
Engineering	--	--	--	--	--
Estimating	-5.4	-58.5	--	+15.3	-48.6
Other	--	--	--	--	--
Support	--	+27.1	--	--	+27.1
Subtotal	-0.3	+50.3	--	+15.3	+65.3
Total Changes	-197.2	-4038.0	--	+15.3	-4219.9
CE - Cost Variance	1484.4	1421.7	--	15.3	2921.4
CE - Cost & Funding	1484.4	1421.7	--	15.3	2921.4

Previous Estimate: December 2016

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-1.3
Schedule Variance from FY 2017 to FY 2024 due to delay of CPD approval (Army). (Schedule)	+5.1	+8.9
Revised estimate to reflect prior year adjustments due to returned funds no longer needed by the activity in FY 2011 and FY 2012 (Navy). (Estimating)	-9.5	-10.2
Revised estimate to reflect the Army's realignment of direct civilian pay costs from RDT&E and Procurement investment accounts to O&M to provide additional transparency and auditability (Army). (Estimating)	-4.3	-5.4
Revised estimate to reflect procurement of Link 16 handheld radios for experimentation and concept refinement for air-to-ground integration (Army). (Estimating)	+8.3	+10.0
Adjustment for current and prior escalation. (Estimating)	+0.1	+0.1
RDT&E Subtotal	-0.3	+2.1

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-16.7
Total Quantity Variance resulting from an increase of 372 channels (186 radios) from 13,808 to 14,180. This change is a result of Army Acquisition Objective increases to the Apache and Gray Eagle platforms of 308 channels (154 radios) and 64 channels (32 radios) respectively. (Subtotal)	+31.5	+50.5
Total Quantity variance resulting from an increase of 372 channels (186 radios) from 13,808 to 14,180. (Quantity)	(+74.7)	(+119.7)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+7.0)	(+11.2)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(-50.2)	(-80.4)
Stretch-out of procurement buy profile by shifting 1,152 quantities from FY 2023 - FY 2028 to FY 2031- FY 2033. (Schedule) (QR)	0.0	+29.8
Revised estimate to align with FY 2019 PB which resulted in program fielding schedule adjustments. (Estimating)	+2.2	+2.8
Revised estimate to reflect the Army's realignment of direct civilian pay costs from RDT&E and Procurement investment accounts to O&M to provide additional transparency and auditability. (Estimating)	-10.5	-15.5
Increase in Other Support due to fact-of-life changes related to manpower and increase of repair costs due to additional systems to be maintained. (Support)	+22.8	+37.5
Increase in Initial Spares due to adjustments in buy profile, fielding schedule and quantity procured. (Support) (QR)	+4.3	+9.2
Procurement Subtotal	+50.3	+97.6

(QR) Quantity Related

Acq O&M	$M	
Current Change Explanations	Base Year	Then Year

Revised estimate to reflect the Army's realignment of direct civilian pay costs from RDT&E and Procurement investment accounts to O&M to provide additional transparency and auditability. (Estimating)	+15.3	+20.9
Acq O&M Subtotal	+15.3	+20.9

Contracts

General Notes

There are no active Small Airborne Networking Radio contracts at this time.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	220	0.00%
Production	0	0	14180	0.00%
Total Program Quantity Delivered	0	0	14400	0.00%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	3577.5	Years Appropriated	16
Expended to Date	1421.0	Percent Years Appropriated	50.00%
Percent Expended	39.72%	Appropriated to Date	1429.0
Total Funding Years	32	Percent Appropriated	39.94%

The above data is current as of February 12, 2018.

Total Expended to Date reflects a net decrease of $6.8M. Total Expended to Date changed from $1,427.8M in the December 2016 SAR to $1,421.0M in this SAR due to a significant prior year adjustment. An increase to expenditures of $3.4M was offset by a decrease of $10.2M to prior year sunk costs in the Navy RDTE account 1319. Prior year adjustments are due to returned funds no longer needed by the activity.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	January 02, 2018
Source of Estimate:	POE
Quantity to Sustain:	14400
Unit of Measure:	Channels
Service Life per Unit:	20.00 Years
Fiscal Years in Service:	FY 2020 - FY 2052

O&S costs are based on the procurement of 7,200 two-channel radios (7,200 radios x 2 channels = 14,400 channels), each with a 20-year estimated service life.

Sustainment Strategy

AMF will conduct an in-depth assessment of risks to logistics and training prior to Milestone C as information on the product becomes available. The program office will execute a step approach to contracting for a Performance Based Logistics (PBL) solution initiated after the FRP decision. Initial procurement of test/integration units is planned to come with a minimum one-year warranty and Interim Contractor Logistics Support at contract award. AMF plans to conduct a business case analysis using actual cost, usage and turn-around times before FRP. This approach facilitates transition to full PBL implementation with greater understanding of requirements, more effective metrics and greater cost fidelity. Depot Source of Repair Analysis will be conducted prior to Milestone C. The training concept is being jointly developed by the AMF Product Office and the Army Training and Doctrine Command community and will include a System Training Plan to accompany the validated requirements document.

Antecedent Information

No Antecedent. AMF radios are software programmable, multi-band, multi-mode, mobile ad hoc networking radios providing simultaneous voice and data communications which may be employed in new and innovative ways as compared to any currently fielded legacy radio.

Annual O&S Costs BY2008 $K		
Cost Element	**Small Airborne Networking Radio (SANR) Average Annual Cost Per Channels**	**No Antecedent (Antecedent)**
Unit-Level Manpower	0.278	--
Unit Operations	0.000	--
Maintenance	3.241	--
Sustaining Support	1.655	--
Continuing System Improvements	0.204	--
Indirect Support	0.000	--
Other	--	--
Total	5.378	--

Item	Total O&S Cost $M			
	Small Airborne Networking Radio (SANR)			No Antecedent (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	2887.4	3176.1	1549.0	N/A
Then Year	5311.8	N/A	2739.4	N/A

Equation to Translate Annual Cost to Total Cost

14,400 channels x 20 years x $5.3784K per channel per year = $1,548,973K = $1,549.0M (BY 2008 $M)

O&S Cost Variance		
Category	**BY 2008 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2016 SAR	1523.3	
Programmatic/Planning Factors	25.7	The total increase for a revised estimate is $25.7M of which $3.3M is due to an increase of total systems to be sustained, and $22.4M due to a shift in buy profile to align with FY 2019 PB.
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	25.7	
Current Estimate	1549.0	

Disposal Estimate Details

Date of Estimate: January 02, 2018

Source of Estimate: POE

Disposal/Demilitarization Total Cost (BY 2008 $M): Total costs for disposal of all Channels are 0.9