



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-445



Next Generation Jammer Mid-Band (NGJ Mid-Band)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

~~This document contains information that may be exempt from mandatory disclosure under the FOIA~~

Table of Contents

Sensitivity Originator	3
Common Acronyms and Abbreviations for MDAP Programs	4
Program Information	6
Responsible Office	6
References	7
Mission and Description	8
Executive Summary	9
Threshold Breaches	11
Schedule	12
(U//FOUO) Performance	13
Track to Budget	14
Cost and Funding	15
Low Rate Initial Production	23
(U//FOUO) Foreign Military Sales	24
Nuclear Costs	24
Unit Cost	25
Cost Variance	28
Contracts	31
Deliveries and Expenditures	33
Operating and Support Cost	34

Sensitivity Originator

Organization: PMA-234 Airborne Electronic Attack Systems and EA-6B Program Office

Organization Email:

Organization Phone: 301-757-7994

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

Next Generation Jammer Mid-Band (NGJ Mid-Band)

DoD Component

Navy

Responsible Office

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Date Assigned: June 28, 2017

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References

SAR Baseline (Development Estimate)

Under Secretary of Defense (Acquisition, Technology & Logistics) Approved Acquisition Program Baseline (APB) dated April 04, 2016

Approved APB

Under Secretary of Defense (Acquisition, Technology & Logistics) Approved Acquisition Program Baseline (APB) dated April 4, 2016

Mission and Description

The Next Generation Jammer Mid-Band (NGJ Mid-Band) program is an electronic attack system that will provide significantly improved Airborne Electronic Attack (AEA) capabilities against advanced threats in the Mid-Band frequency range through enhanced agility and precision within jamming assignments, increased interoperability and expanded broadband capacity for greater threat coverage against a wide variety of radio frequency emitters. The Effective Isotropic Radiated Power (EIRP) in the NGJ Mid-Band system will be sufficient to provide robust jamming at standoff distances from Integrated Air Defense Systems (IADS) radars, communications, and data links. The NGJ Mid-Band system will augment and then replace the legacy AN/ALQ-99 Tactical Jamming System (fielded 1971) for the EA-18G, providing significantly improved radar and communication jamming performance as well as improved reliability and maintainability.

The NGJ Mid-Band system will encounter sophisticated IADS and information operations (i.e., other electronic threat systems) in multiple areas of responsibility and across all phases of military operations. Threat operators and systems adapt and exploit available frequency ranges, employing techniques and tactics designed to confuse or otherwise defeat friendly AEA capabilities. In order to defeat these continuously evolving enemy radio frequency threats, the NGJ Mid-Band design must provide for sufficient EIRP to achieve threat systems engagement stand-off distances, support increased capacity (number of jamming assignments) as a result of increased threat density, and support agile employment by operators as well as provide a flexible system architecture that can be upgraded quickly to meet new mission demands.

Executive Summary

Program Highlights Since Last Report

NGJ Mid-Band is the next step in the evolution of Airborne Electronic Attack (AEA) and is needed to meet current and emerging Electronic Warfare gaps in the mid-frequency range; ensure kill chain wholeness against growing threat capabilities and capacity; and to keep pace with threat weapons systems advances and continuous expansion of the AEA mission area. NGJ Mid-Band capabilities will address AEA capability gaps, AEA sufficiency gaps, and address ALQ-99 Tactical Jamming System shortfalls in scalability, flexibility, supportability, interoperability, availability, and capability in the mid-frequency range. The system will deliver significantly improved radar and communications jamming capabilities with Open Systems Architecture that supports software and hardware updates to rapidly counter improving threats, and will contribute across the spectrum of missions defined in the Defense Strategic Guidance to include strike warfare, projecting power despite anti-access/area denial challenges, and counterinsurgency/irregular warfare.

(b)(4)

A very methodical test strategy and risk management approach has been implemented, utilizing technical knowledge points and a build-up test strategy (component-level build and test, subsystem build, integration and test, and system level test in system integration laboratories, anechoic chambers (installed on aircraft), and in-flight on test ranges). An incentive plan has been incorporated in the EMD contract tied specifically to the risks and associated technical knowledge points, with shared technical incentive fee between the aircraft contractor (Boeing) and the pod contractor (Raytheon) as well as specific pod system level technical incentive fee for Raytheon only. Continuous focus on supplier performance and management is also critical to success.

On October 18, 2017, a Memorandum of Understanding was signed with Australia, formally forming a Joint Program Office for a cooperative development program.

During the April 2017 Critical Design Review, the program identified deficiencies resulting in the required redesign of the pod structure. This has caused the program to breach its APB schedule milestones for Milestone C, Operational Test Readiness Review, IOC, and FRP Decision Review as well as its cost threshold for total RDT&E. A government/industry Integrated Structures Team has convened and is leading the redesign effort, expecting completion by May 2018. Meanwhile, all subsystem (Antenna Arrays, Power Generation System, Software, Common Electronics Unit, etc.) design, development, manufacturing, integration and test are continuing independent of the structure redesign effort, and the program continues to remain aligned with the EA-18G H16 schedule for integration. A Program Deviation Report has been submitted to the Assistant Secretary of the Navy for Research, Development, and Acquisition. Upon completion of the Integrated Structures Team required redesign effort, a revised APB will be submitted for approval.

Developmental testing for the NGJ Mid-Band program began in FY 2017 with system-level scale model wind tunnel testing. Preparation and readiness efforts are ongoing to support major developmental testing, which will include aeromechanical, mission systems, system and EA-18G integration, and product support tests culminating in Initial Operational Test and Evaluation.

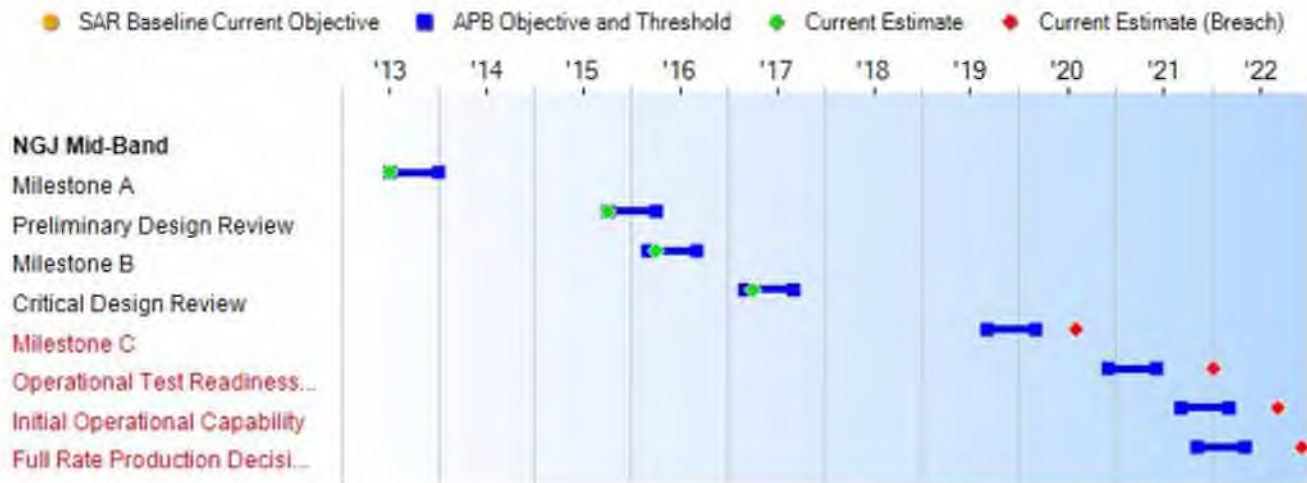
There are no significant software-related issues with this program at this time.

History of Significant Developments Since Program Initiation	
History of Significant Developments Since Program Initiation	
Date	Significant Development Description
April 2016	The NGJ Mid-Band program received Milestone B approval to enter EMD.
April 2016	A 56-month sole source Cost Plus Incentive Fee (CPIF) contract was awarded to The Raytheon Company for the EMD phase. During the performance of this contract, the NGJ Mid-Band program will conduct a Critical Design Review (CDR) and begin delivery of 15 Engineering Development Models that will be used for initial testing.
December 2016	A sole source CPIF contract modification was awarded to The Boeing Company for the integration of the NGJ Mid-Band pod onto the EA-18G aircraft. This effort is in support of the EMD phase of the NGJ Mid-Band program and includes the design and manufacturing of 15 engineering change proposal 6472 A kits, and the integration, demonstration and test of NGJ Mid-Band pods on the EA-18G aircraft.
April 2017	On April 27, 2017, the program completed its CDR.
October 2017	On October 18, 2017, Australia became a cooperative partner for NGJ Mid-Band development.

Threshold Breaches

APB Breaches			Explanation of Breach
Schedule		<input checked="" type="checkbox"/>	Schedule - The schedule breach is driven by the required redesign of the pod structure as a result of deficiencies discovered during the NGJ Mid-Band Critical Design Review. A Program Deviation Report has been submitted to the Assistant Secretary of the Navy for Research, Development, and Acquisition.
Performance		<input type="checkbox"/>	
Cost	RDT&E	<input checked="" type="checkbox"/>	
	Procurement	<input type="checkbox"/>	
	MILCON	<input type="checkbox"/>	
	Acq O&M	<input type="checkbox"/>	
O&S Cost		<input type="checkbox"/>	Cost - The RDT&E cost breach is driven by the schedule delay resulting from the required redesign of the pod structure due to deficiencies discovered during the NGJ Mid-Band Critical Design Review. A Program Deviation Report has been submitted to the Assistant Secretary of the Navy for Research, Development, and Acquisition.
Unit Cost	PAUC	<input type="checkbox"/>	
	APUC	<input type="checkbox"/>	
Nunn-McCurdy Breaches			
Current UCR Baseline			Upon completion of the Integrated Structures Team required redesign effort, a revised APB will be submitted for approval.
	PAUC	None	
	APUC	None	
Original UCR Baseline			
	PAUC	None	
	APUC	None	

Schedule



Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
Milestone A	Jul 2013	Jul 2013	Jan 2014	Jul 2013
Preliminary Design Review	Oct 2015	Oct 2015	Apr 2016	Oct 2015
Milestone B	Mar 2016	Mar 2016	Sep 2016	Apr 2016
Critical Design Review	Mar 2017	Mar 2017	Sep 2017	Apr 2017
Milestone C	Sep 2019	Sep 2019	Mar 2020	Aug 2020¹ (Ch-1)
Operational Test Readiness Review	Dec 2020	Dec 2020	Jun 2021	Jan 2022¹ (Ch-1)
Initial Operational Capability	Sep 2021	Sep 2021	Mar 2022	Sep 2022¹ (Ch-1)
Full Rate Production Decision Review	Nov 2021	Nov 2021	May 2022	Dec 2022¹ (Ch-1)

¹ APB Breach

Change Explanations

(Ch-1) The Milestone C current estimate has changed from September 2019 to August 2020, Operational Test Readiness Review current estimate has changed from December 2020 to January 2022, IOC current estimate has changed from September 2021 to September 2022, and FRP Decision Review current estimate has changed from November 2021 to December 2022 due to a required redesign of the pod structure as a result of deficiencies discovered during the NGJ Mid-Band Critical Design Review. A Program Deviation Report has been submitted to the Assistant Secretary of the Navy for Research, Development, and Acquisition.

(U//FOUO) Performance

(U//FOUO) Performance Characteristics			
SAR Baseline Development Estimate	Current APB Development Objective/Threshold	Demonstrated Performance	Current Estimate
(b)(3):10 USC § 130			

Classified Performance information is provided in the classified annex to this submission.

Requirements Reference

Next Generation Jammer CDD, dated August 18, 2015

Change Explanations

None

Track to Budget

RDT&E

Appn	BA	PE
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Navy 1319 05 0604274N

Project	Name
0557	Next Generation Jammer

Procurement

Appn	BA	PE
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Navy 1506 05 0204154N

Line Item	Name
0591	Next Generation Jammer (NGJ)

Navy 1506 06 0204161N

Line Item	Name
0605	Spares and Repair Parts (Shared)

MILCON

Appn	BA	PE
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Navy 1205 01 0712876N

Project	Name
00620258	Next Generation Jammer Facility

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2016 \$M			BY 2016 \$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	3454.1	3454.1	3799.5	3867.5 ¹	3586.2	3586.2	4044.5
Procurement	4002.6	4002.6	4402.9	3865.0	4836.9	4836.9	4774.0
Flyaway	--	--	--	3274.4	--	--	4057.6
Recurring	--	--	--	3242.9	--	--	4014.9
Non Recurring	--	--	--	31.5	--	--	42.7
Support	--	--	--	590.6	--	--	716.4
Other Support	--	--	--	516.7	--	--	632.5
Initial Spares	--	--	--	73.9	--	--	83.9
MILCON	7.0	7.0	7.7	7.1	7.8	7.8	7.9
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	7463.7	7463.7	N/A	7739.6	8430.9	8430.9	8826.4

¹ APB Breach

Current APB Cost Estimate Reference

Program Life Cycle Cost Estimate (PLCCE) dated March 08, 2016

Cost Notes

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.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	4	4	7
Procurement	131	131	128
Total	135	135	135

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	1814.3	632.9	459.5	568.7	408.1	161.0	0.0	0.0	4044.5
Procurement	0.0	0.0	1.0	260.3	240.1	376.9	530.1	3365.6	4774.0
MILCON	0.0	0.0	7.9	0.0	0.0	0.0	0.0	0.0	7.9
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2019 Total	1814.3	632.9	468.4	829.0	648.2	537.9	530.1	3365.6	8826.4
PB 2018 Total	1836.1	632.9	728.3	766.8	659.4	524.2	534.7	2793.4	8475.8
Delta	-21.8	0.0	-259.9	62.2	-11.2	13.7	-4.6	572.2	350.6

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	7	0	0	0	0	0	0	0	0	7
Production	0	0	0	0	7	3	8	14	96	128
PB 2019 Total	7	0	0	0	7	3	8	14	96	135
PB 2018 Total	4	0	0	3	8	12	14	14	80	135
Delta	3	0	0	-3	-1	-9	-6	0	16	0

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
2010	--	--	--	--	--	--	111.7
2011	--	--	--	--	--	--	83.7
2012	--	--	--	--	--	--	154.9
2013	--	--	--	--	--	--	153.3
2014	--	--	--	--	--	--	153.5
2015	--	--	--	--	--	--	224.6
2016	--	--	--	--	--	--	373.5
2017	--	--	--	--	--	--	559.1
2018	--	--	--	--	--	--	632.9
2019	--	--	--	--	--	--	459.5
2020	--	--	--	--	--	--	568.7
2021	--	--	--	--	--	--	408.1
2022	--	--	--	--	--	--	161.0
Subtotal	7	--	--	--	--	--	4044.5

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2016 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2010	--	--	--	--	--	--	120.4
2011	--	--	--	--	--	--	88.1
2012	--	--	--	--	--	--	160.4
2013	--	--	--	--	--	--	157.1
2014	--	--	--	--	--	--	155.1
2015	--	--	--	--	--	--	224.2
2016	--	--	--	--	--	--	366.6
2017	--	--	--	--	--	--	539.9
2018	--	--	--	--	--	--	600.8
2019	--	--	--	--	--	--	428.2
2020	--	--	--	--	--	--	519.7
2021	--	--	--	--	--	--	365.6
2022	--	--	--	--	--	--	141.4
Subtotal	7	--	--	--	--	--	3867.5

Annual Funding 1506 Procurement Aircraft Procurement, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2019	--	--	0.9	--	0.9	0.1	1.0
2020	7	223.8	6.2	--	230.0	30.3	260.3
2021	3	119.0	13.8	--	132.8	107.3	240.1
2022	8	263.1	15.5	--	278.6	98.3	376.9
2023	14	429.3	15.9	--	445.2	84.9	530.1
2024	14	426.0	14.5	--	440.5	80.4	520.9
2025	14	424.3	5.7	--	430.0	81.8	511.8
2026	14	418.7	--	--	418.7	46.5	465.2
2027	14	419.7	--	--	419.7	42.3	462.0
2028	14	421.7	--	--	421.7	38.7	460.4
2029	14	425.2	--	9.9	435.1	38.8	473.9
2030	12	371.6	--	13.1	384.7	35.0	419.7
2031	--	--	--	19.7	19.7	32.0	51.7
Subtotal	128	3942.4	72.5	42.7	4057.6	716.4	4774.0

Annual Funding 1506 Procurement Aircraft Procurement, Navy							
Fiscal Year	Quantity	BY 2016 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2019	--	--	0.8	--	0.8	0.1	0.9
2020	7	201.5	5.6	--	207.1	27.2	234.3
2021	3	105.0	12.2	--	117.2	94.7	211.9
2022	8	227.6	13.4	--	241.0	85.1	326.1
2023	14	364.1	13.5	--	377.6	72.0	449.6
2024	14	354.3	12.1	--	366.4	66.8	433.2
2025	14	345.9	4.6	--	350.5	66.8	417.3
2026	14	334.7	--	--	334.7	37.1	371.8
2027	14	328.9	--	--	328.9	33.1	362.0
2028	14	324.0	--	--	324.0	29.7	353.7
2029	14	320.3	--	7.5	327.8	29.1	356.9
2030	12	274.4	--	9.7	284.1	25.8	309.9
2031	--	--	--	14.3	14.3	23.1	37.4
Subtotal	128	3180.7	62.2	31.5	3274.4	590.6	3865.0

Annual Funding 1205 MILCON Military Construction, Navy and Marine Corps		
Fiscal Year	TY \$M	
	Total Program	
2019		7.9
Subtotal		7.9

Annual Funding 1205 MILCON Military Construction, Navy and Marine Corps	
Fiscal Year	BY 2016 \$M
	Total Program
2019	7.1
Subtotal	7.1

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	4/5/2016	4/5/2016
Approved Quantity	30	25
Reference	Milestone B ADM	Milestone B ADM
Start Year		
End Year		

The Current Total LRIP Quantity is more than 10% of the total production quantity in order to provide production-representative NGJ Mid-Band systems in support of Initial Operational Test and Evaluation, ensure adequate and efficient manufacturing capability while maintaining the industrial base, and permit an orderly increase, and hence reduced risk, in the NGJ Mid-Band production rate leading to the current planned maximum/optimal economic production rate of 14 ship-sets per year at FRP.

The Milestone B ADM approves an LRIP quantity of up to 30. The start year and end year are not specified.

~~(U//FOUO)~~ Foreign Military Sales**~~(U//FOUO)~~ Notes**

On October 07, 2016 a \$4M dollar FMS case was signed with Australia for technical data and support.

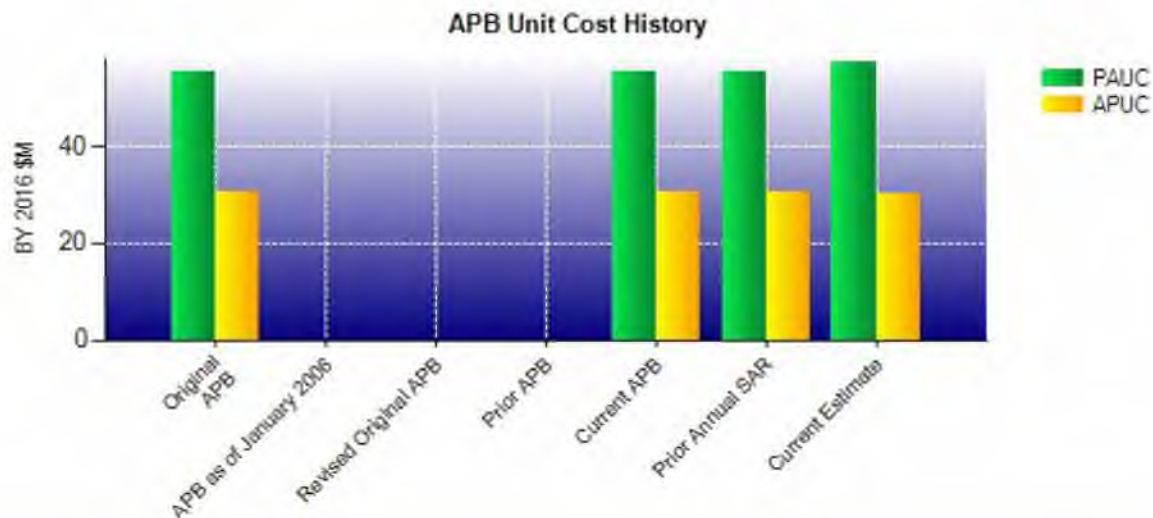
On October 18, 2017 Australia became a cooperative partner for NGJ Mid-Band development.

Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2016 \$M	BY 2016 \$M	% Change
	Current UCR Baseline (Apr 2016 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	7463.7	7739.6	
Quantity	135	135	
Unit Cost	55.287	57.330	+3.70
Average Procurement Unit Cost			
Cost	4002.6	3865.0	
Quantity	131	128	
Unit Cost	30.554	30.195	-1.17
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2016 \$M	BY 2016 \$M	% Change
	Original UCR Baseline (Apr 2016 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	7463.7	7739.6	
Quantity	135	135	
Unit Cost	55.287	57.330	+3.70
Average Procurement Unit Cost			
Cost	4002.6	3865.0	
Quantity	131	128	
Unit Cost	30.554	30.195	-1.17



APB Unit Cost History					
Item	Date	BY 2016 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Apr 2016	55.287	30.554	62.451	36.923
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	N/A	N/A	N/A	N/A	N/A
Current APB	Apr 2016	55.287	30.554	62.451	36.923
Prior Annual SAR	Dec 2016	55.379	30.732	62.784	37.318
Current Estimate	Dec 2017	57.330	30.195	65.381	37.297

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	
62.451	-0.219	0.158	3.710	0.270	-0.613	0.000	-0.376	2.930	65.381

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
36.923	-0.167	0.176	2.061	0.000	-1.299	0.000	-0.397	0.374	37.297

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	Jul 2013	N/A	Jul 2013
Milestone B	N/A	Mar 2016	N/A	Apr 2016
Milestone C	N/A	Sep 2019	N/A	Aug 2020
IOC	N/A	Sep 2021	N/A	Sep 2022
Total Cost (TY \$M)	N/A	8430.9	N/A	8826.4
Total Quantity	N/A	135	N/A	135
PAUC	N/A	62.451	N/A	65.381

PAUC is reflected as TY \$M.

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	3586.2	4836.9	7.8	8430.9
Previous Changes				
Economic	+4.0	+9.6	+0.1	+13.7
Quantity	--	--	--	--
Schedule	--	+26.7	--	+26.7
Engineering	--	--	--	--
Estimating	-11.0	+0.1	--	-10.9
Other	--	--	--	--
Support	--	+15.4	--	+15.4
Subtotal	-7.0	+51.8	+0.1	+44.9
Current Changes				
Economic	-12.2	-31.0	-0.1	-43.3
Quantity	+109.7	-88.2	--	+21.5
Schedule	+237.0	+237.1	--	+474.1
Engineering	+36.4	--	--	+36.4
Estimating	+94.4	-166.4	+0.1	-71.9
Other	--	--	--	--
Support	--	-66.2	--	-66.2
Subtotal	+465.3	-114.7	--	+350.6
Total Changes	+458.3	-62.9	+0.1	+395.5
Current Estimate	4044.5	4774.0	7.9	8826.4

Summary BY 2016 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	3454.1	4002.6	7.0	7463.7
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+9.4	--	+9.4
Engineering	--	--	--	--
Estimating	-10.8	+0.4	--	-10.4
Other	--	--	--	--
Support	--	+13.5	--	+13.5
Subtotal	-10.8	+23.3	--	+12.5
Current Changes				
Economic	--	--	--	--
Quantity	+99.9	-66.4	--	+33.5
Schedule	+204.0	+112.0	--	+316.0
Engineering	+34.1	--	--	+34.1
Estimating	+86.2	-141.7	+0.1	-55.4
Other	--	--	--	--
Support	--	-64.8	--	-64.8
Subtotal	+424.2	-160.9	+0.1	+263.4
Total Changes	+413.4	-137.6	+0.1	+275.9
Current Estimate	3867.5	3865.0	7.1	7739.6

Previous Estimate: December 2016

RDT&E		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-12.2
Addition of three System Demonstration Test articles shipsets. (Quantity)		+99.9	+109.7
Schedule variance delay from FY 2021 to FY 2022 for development completion. (Schedule)		+204.0	+237.0
Addition of funding for NGJ Mid-Band related platform software updates. (Engineering)		+21.8	+23.3
Addition of funding for NGJ Mid-Band Adaptive Emitter Characterization Response (AEER) software and firmware upgrade. (Engineering)		+9.6	+10.2
Addition of funding for NGJ Mid-Band studies for advanced capability efforts. (Engineering)		+2.7	+2.9
Adjustment for current and prior escalation. (Estimating)		+4.7	+4.9
Revised estimate for execution adjustments. (Estimating)		-3.1	-3.1
Revised estimate for Small Business Innovation Research in FY 2017. (Estimating)		-18.0	-18.7
Revised estimate for logistic support elements. (Estimating)		+74.7	+81.9
Revised estimate due to structure design rework. (Estimating)		+27.9	+29.4
RDT&E Subtotal		+424.2	+465.3

Procurement		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-31.0
Quantity variance resulting from a decrease of three NGJ Mid-Band pod shipsets from 131 to 128. (Quantity)		-66.4	-88.2
Stretch-out of procurement buy profile one additional year from FY 2029 to FY 2030 due to schedule delays. (Schedule)		0.0	+112.5
Additional Schedule Variance due to the rephasing of pod shipsets from FY 2019-FY 2030. (Schedule)		+112.0	+123.7
Additional Schedule Variance is due to the rephasing production line shutdown funding to align with updated procurement buy profile delay of one year from FY 2029 to FY 2030. (Schedule)		0.0	+0.9
Revised estimate for A-kit procurement and installation. (Estimating)		-141.7	-166.4
Decrease in Other Support due to an estimating methodology update for Support Equipment, Data, and Training. (Support)		-64.1	-67.3
Increase in Initial Spares is due to one-year schedule delay which required rephasing of spares. (Support)		-0.7	+1.1
Procurement Subtotal		-160.9	-114.7

MILCON		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-0.1
Revised estimate to reflect application of new out year inflation indices. (Estimating)		+0.1	+0.1
MILCON Subtotal		+0.1	0.0

Contracts

Contract Identification	
Appropriation:	RDT&E
Contract Name:	Engineering and Manufacturing Development
Contractor:	Raytheon Company
Contractor Location:	2000 East El Segundo Blvd El Segundo, CA 90245
Contract Number:	N00019-16-C-0002
Contract Type:	Cost Plus Incentive Fee (CPIF)
Award Date:	April 13, 2016
Definitization Date:	April 13, 2016

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
977.2	N/A	0	1000.4	N/A	0	1067.8	1067.8

Target Price Change Explanation
The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the award of contract modifications for Australian FMS support and a Ground Power and Cooling modification to enable full pod functionality in ground test chambers.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/28/2018)	-8.6	+5.0
Previous Cumulative Variances	-4.0	-4.2
Net Change	-4.6	+9.2

Cost and Schedule Variance Explanations
The unfavorable net change in the cost variance is due to Common Electronics Unit hardware delays that are negatively affecting software productivity. This has caused Raytheon to expend additional funding for mitigations and work-arounds to continue software development.

The favorable net change in the schedule variance is due to early material receipt of array transmit/receive modules and a single point adjustment after definitization of subcontract award.

Contract Identification

Appropriation: RDT&E
Contract Name: NGJ Mid-Band EMD Integraton
Contractor: The Boeing Company
Contractor Location: 6200 JS McDonnell Blvd
 Saint Louis, MO 63134-1939
Contract Number: N00019-16-C-0032
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: April 07, 2016
Definitization Date: April 07, 2016

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
20.0	N/A	N/A	249.7	N/A	N/A	218.2	218.2

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the award of contract modifications to provide for the integration of the NGJ Mid-Band pod onto the EA-18G aircraft.

The difference between the current contract price and the estimated price at completion is due to contractor efficiencies in the areas of software and test. This delta will be reallocated to mitigate the impact of the pod structure redesign.

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/25/2018)	+12.5	-3.0
Previous Cumulative Variances	+1.0	-0.8
Net Change	+11.5	-2.2

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to the complexity of the software development effort being less than planned.

The unfavorable net change in the schedule variance is due to late receipt of pod cockpit control panel units and linear analysis on flying qualities, loads, high and low-speed wind tunnel activities.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	7	0.00%
Production	0	0	128	0.00%
Total Program Quantity Delivered	0	0	135	0.00%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	8826.4	Years Appropriated	9
Expended to Date	1726.3	Percent Years Appropriated	40.91%
Percent Expended	19.56%	Appropriated to Date	2447.2
Total Funding Years	22	Percent Appropriated	27.73%

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

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	January 08, 2018
Source of Estimate:	POE
Quantity to Sustain:	135
Unit of Measure:	System
Service Life per Unit:	20.00 Years
Fiscal Years in Service:	FY 2022 - FY 2041

- Unit of measure (system) is defined as a shipset, which consists of 2 pods.
- The service life per pod is 7,200 hours.
- The service life and usage is tied to the EA-18G platform.
- Total System Operating Years: 1,252.
- Inflation Indices Utilized: FY 2017 OSD indices.

Sustainment Strategy

- Contractor Logistics Support covering the total system through the Developmental Test and Evaluation Phase (initial).
- Organizational, Intermediate, and Depot level maintenance capabilities; military maintenance support (future).
- All systems and sub-systems will have Performance Based Agreements with organic depots or the Original Equipment Manufacturer for repair support.

Antecedent Information

- Antecedent program: ALQ-99 Tactical Jamming System
- The dataset used in the antecedent costs below are reported FY 2008 costs, which are most representative of steady state prior to de-commissioning EA-6B squadrons.
- The dataset includes data from the ALQ-99 system, which covers a larger frequency spectrum than the NGJ Mid-Band system, and is not normalized to specific mid-band data.
- Due to data limitations, the antecedent is represented in dollars per aircraft operating years based on Primary Aircraft Authorization.
- Data sources: Decision Knowledge Programming for Logistics Analysis and Technical Evaluation, Naval Visibility and Management of Operating and Support Costs database, and various technical sources, including Naval Air Systems Command AIR 4.2.2, Naval Air Warfare Center Weapons Division Point Mugu, Naval Sea Systems Command Crane, and Center for Naval Aviation Technical Training.

Annual O&S Costs BY2016 \$M			
Cost Element	NGJ Mid-Band Average Annual Cost Per System		ALQ-99 (Antecedent) Average Annual Cost Per System
Unit-Level Manpower	0.058		0.060
Unit Operations	0.000		0.000
Maintenance	0.377		0.538
Sustaining Support	0.120		0.065
Continuing System Improvements	0.371		0.078
Indirect Support	0.063		0.027
Other	0.000		0.000
Total	0.989		0.768

Item	Total O&S Cost \$M			
	NGJ Mid-Band			ALQ-99 (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	1243.7	1368.1	1238.3	961.5
Then Year	1673.0	N/A	1717.7	N/A

The antecedent average annual cost above is multiplied by the total number of operating system years associated with the NGJ Mid-Band to provide an O&S cost comparison.

Equation to Translate Annual Cost to Total Cost

NGJ Mid-Band Total O&S Cost = NGJ Mid-Band Average Annual O&S Cost per System * Total System Operating Years

\$1238.3M Total O&S Cost = \$0.989M/System/Year * 1,252 System Operating Years. The derivation of the system operating years is the summation of the estimated cumulative shipset (system) quantity profile for the FYs in service.

O&S Cost Variance		
Category	BY 2016 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2016 SAR	1292.1	
Programmatic/Planning Factors	-269.5	Updated NGJ Mid-Band procurement and delivery profiles, unit pricing, program dates, to include Materiel Support Date and I level standup, and fielding plan.
Cost Estimating Methodology	0.0	
Cost Data Update	215.7	Updated procurement pricing (repair cost is a function of production unit cost).
Labor Rate	0.0	
Energy Rate	0.0	

Technical Input	0.0
Other	0.0
Total Changes	-53.8
Current Estimate	1238.3

Disposal Estimate Details

Date of Estimate: January 08, 2018
Source of Estimate: POE
Disposal/Demilitarization Total Cost (BY 2016 \$M): Total costs for disposal of all System are 2.1

The Demil/Disposal estimate for NGJ Mid-Band will be refined at Milestone C based on the System Disposal Plan Annex to the Life Cycle Sustainment Plan.