



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-368



AGM-88E Advanced Anti-Radiation Guided Missile (AGM-88E AARGM)

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.~~

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Sensitivity Originator

Organization: Program Executive Office (Unmanned Aviation and Strike Weapons), PMA242, Patuxent River, MD
Organization Email:
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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

AGM-88E Advanced Anti-Radiation Guided Missile (AGM-88E AARGM)

DoD Component

Navy

Joint Participants

Italian Ministry of Defense

Responsible Office

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Date Assigned: June 29, 2017

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References

SAR Baseline (Production Estimate)

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated January 21, 2009

Approved APB

Assistant Secretary of the Navy (Research, Development & Acquisition) (ASN(RDA)) Approved Acquisition Program Baseline (APB) dated June 27, 2016

Mission and Description

The AGM-88E Advanced Anti-Radiation Guided Missile (AGM-88E AARGM) program fields a major system upgrade to the AGM-88 High Speed Anti-Radiation Missile (HARM) inventory. The AGM-88E AARGM provides a significant enhancement to Naval operational capability in the Offensive Counter Air/Suppression of Enemy Air Defenses (SEAD) mission area by technological upgrade to the HARM guidance system to counter enemy use of simple and cheap countermeasures and tactics such as mobility and radar shutdown. The AGM-88E AARGM is employed in the Offensive Counter Air/SEAD role in direct support of all mission areas within the objective force (e.g., Strike Warfare, Amphibious Warfare, Anti-Surface Ship Warfare, Command and Control Warfare and Information Warfare) providing a rapid, organic response to air defense threats ranging from Smaller Scale Contingencies to Major Theater War. It will be employed by Naval aircraft operating from both sea and land bases.

The AGM-88E AARGM missile provides a new multi-mode guidance section and modified control section mated with existing HARM propulsion and warhead sections. The new guidance section has a passive Anti-Radiation Homing receiver and associated antennae, a Global Positioning System/Inertial Navigation System, and Millimeter Wave radar for terminal guidance capability. The AGM-88E AARGM also has the capability to transmit terminal (end game) data via a Weapon Impact Assessment transmitter to national satellites just before AGM-88E AARGM impacts its target. Additionally, a provision to receive off-board targeting information, via the Integrated Broadcast System, is in development for the weapon system.

The AGM-88E AARGM is the acquisition upgrade and complement to HARM, the Navy's only Defense Suppression missile. Acquisition of AGM-88E AARGM is critical to addressing the limitations and shortcomings of HARM, which include counter shutdown capability, limited lethality against advanced threat air defense units, limited captive carry life, no impact reporting capability, and no off-board targeting reception capability.

The AGM-88E AARGM is fielded on the F/A-18C-F and the EA-18G. CPD objective aircraft include EA-6B, F-16C/J and F-35 external carriage (post platform IOC).

Executive Summary

The AARGM Program remains on track and is executing the production, deployment and sustainment phase of the program. AARGM weapon system production is scheduled to continue through 2023. A total of 2,435 AGM-88E AARGM (including Captive Air Training Missiles (CATMs) and spare Guidance and Control Sections) are planned for production. The FRP lot 6 (with FRP lot 7 option) contract was awarded August 2017. Modification to add Italian Air Force (ITAF) quantities was awarded October 2017. The Cooperative Production, Sustainment and follow-on Development Memorandum of Agreement between the United States and Italy remains in effect. Australia FMS Case procurement of AARGM CATMs and support is included in the FRP lot 4 contract awarded September 2015. Block 1 Upgrade was initiated in July 2017 with a technical directive that gives authority to load missiles in the Fleet until July 2018.

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

Threshold Breaches

APB Breaches

Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches

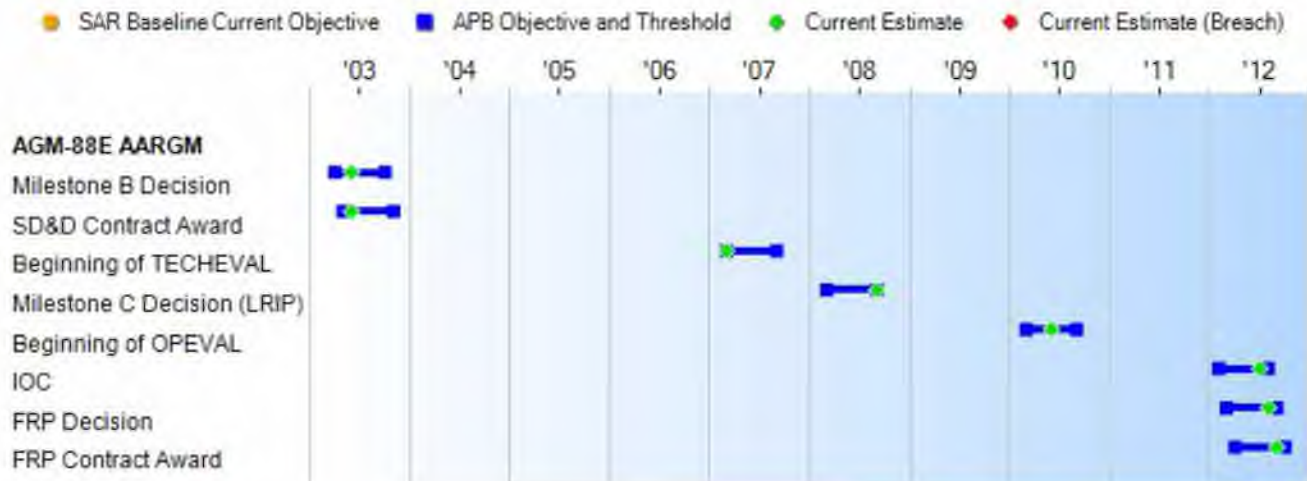
Current UCR Baseline

PAUC	None
APUC	None

Original UCR Baseline

PAUC	None
APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate
Milestone B Decision	Apr 2003	Apr 2003	Oct 2003	Jun 2003
SD&D Contract Award	May 2003	May 2003	Nov 2003	Jun 2003
Beginning of TECHEVAL	Mar 2007	Mar 2007	Sep 2007	Mar 2007
Milestone C Decision (LRIP)	Mar 2008	Mar 2008	Sep 2008	Sep 2008
Beginning of OPEVAL	Mar 2009	Mar 2010	Sep 2010	Jun 2010
IOC	Nov 2010	Feb 2012	Aug 2012	Jul 2012
FRP Decision	Jul 2010	Mar 2012	Sep 2012	Aug 2012
FRP Contract Award	Dec 2010	Apr 2012	Oct 2012	Sep 2012

Change Explanations

None

Acronyms and Abbreviations

OPEVAL - Operational Evaluation
 SD&D - System Development & Demonstration
 TECHEVAL - Technical Evaluation

Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Material Availability				
>=0.95	>=0.95	>=0.9	.98	.96
Net Ready				
The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include (1) DISR-mandated GIG IT standards and profiles identified in the TV-1; (2) DISR-man dated GIG KIPs identified in the KIP declaration table; (3) NCOW RM Enterprise Services; (4) IA requirements including availability, integrity, authentication, confidentiality, and non-repudiation, and issuance of an ATO by the DAA; and 5) Operationally effective IEs, and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include (1) DISR-mandated GIG IT standards and profiles identified in the TV-1; (2) DISR-man dated GIG KIPs identified in the KIP declaration table; (3) NCOW RM Enterprise Services; (4) IA requirements including availability, integrity, authentication, confidentiality, and non-repudiation, and issuance of an ATO by the DAA; and 5) Operationally effective IEs, and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include 1) DISR - mandated GIG IT standards and profiles identified in the TV-1; 2) DISR-mandated GIG KIPs identified in the KIP declaration table; 3) NCOW RM Enterprise Services; 4) IA requirements including availability, integrity, authentication, confidentiality and non-repudiation, and issuance of an IATO by the DAA; and 5) Operationally effective IEs; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include 1) DISR - mandated GIG IT standards and profiles identified in the TV-1; 2) DISR-mandated GIG KIPs identified in the KIP declaration table; 3) NCOW RM Enterprise Services; 4) IA requirements including availability, integrity, authentication, confidentiality, and non-repudiation, and issuance of an IATO by the DAA; and 5) Operation-ally effective IEs; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include 1) DISR - mandated GIG IT standards and profiles identified in the TV-1; 2) DISR-mandated GIG KIPs identified in the KIP declaration table; 3) NCOW RM Enterprise Services; 4) IA requirements including availability, integrity, authentication, confidentiality and non-repudiation, and issuance of an IATO by the DAA; and 5) Operation-ally effective IEs; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing

(Ch-1)

(Ch-1)

integrated architecture views.	integrated architecture views.	in the applicable joint and system integrated architecture views.	architecture views.	specified in the applicable joint and system integrated architecture views.
Probability of Correct Identification (PCID) of a Target Emitter				
>=0.99 PCID for all emitters in the AARGM CPD Appendix D	>=0.99 PCID for all emitters in the AARGM CPD Appendix D	>=0.95 PCID of available threshold emitters in the AARGM CPD Appendix D	0.95 PCID of available threshold emitters in the AARGM CPD Appendix D	0.95 PCID for all emitters in the AARGM CPD Appendix D

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

Requirements Reference

CPD dated April 1, 2010

Change Explanations

(Ch-1) The Material Availability current estimate changed from .97 to .96 which meets the KPP objective as defined in the AARGM CPD. Material Availability is the number of times AARGM was available/number of times AARGM was required. AARGM is considered to be required the first time it is taken out of storage and loaded on the aircraft. AARGM is considered to be available if it passes initial Built-In Test (BIT). (Threshold = $\geq .9$, Objective = $\geq .95$)

Acronyms and Abbreviations

ATO - Authority to Operate
 BIT - Built-In Test
 DAA - Designated Approval Authority
 DISR - DoD IT Standards Registry
 GIG - Global Information Grid
 IA - Information Assurance
 IATO - Interim Authority to Operate
 IE - Information Exchange
 IT - Information Technology
 KIP - Key Interface Profile
 NCOW RM - Net Centric Operations and Warfare Reference Model
 TV - Technical View

Track to Budget

General Notes

The FY 2019 PB includes procurement funding for the AARGM - Extended Range (AARGM-ER) program. AARGM-ER procurement funding is included in the same Budget Line Item, 2327, beginning in FY 2021. AARGM-ER development funding is under the same Program Element, 0205601N, but a separate Project Unit from AARGM development funding.

RDT&E

Appn	BA	PE	
Navy	1319	07	0205601N
Project		Name	
	2185	AARGM	(Shared)
	2661	AARGM Cong Add	(Sunk)
	9C58A	AARGM Cong Add	(Sunk)

Procurement

Appn	BA	PE	
Navy	1507	02	0204162N
Line Item		Name	
	2327	HARM Mods	(Shared)
Navy	1507	06	0204162N
Line Item		Name	
	6120	Initial Spares	(Shared) (Sunk)

Notes

Initial spares were procured in FY 2015.

Cost and Funding

Cost Summary

Total Acquisition Cost						
Appropriation	BY 2003 \$M			BY 2003 \$M	TY \$M	
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective
RDT&E	578.9	673.0	682.3	673.3	600.3	716.7
Procurement	949.6	1425.5	1452.5	1431.9	1261.1	1947.0
Flyaway	--	--	--	1327.7	--	--
Recurring	--	--	--	1223.9	--	--
Non Recurring	--	--	--	103.8	--	--
Support	--	--	--	104.2	--	--
Other Support	--	--	--	94.6	--	--
Initial Spares	--	--	--	9.6	--	--
MILCON	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0
Total	1528.5	2098.5	N/A	2105.2	1861.4	2663.7

Current APB Cost Estimate Reference

SCP dated June 19, 2012

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 Production Estimate	Current APB Production	Current Estimate
RDT&E	40	40	40
Procurement	1879	2435	2435
Total	1919	2475	2475

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	717.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	717.0
Procurement	842.1	183.4	188.0	183.9	188.0	175.4	179.0	0.0	1939.8
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2019 Total	1559.1	183.4	188.0	183.9	188.0	175.4	179.0	0.0	2656.8
PB 2018 Total	1554.6	183.4	190.0	185.9	190.1	177.4	188.8	0.0	2670.2
Delta	4.5	0.0	-2.0	-2.0	-2.1	-2.0	-9.8	0.0	-13.4

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	40	0	0	0	0	0	0	0	0	40
Production	0	927	251	257	243	242	247	268	0	2435
PB 2019 Total	40	927	251	257	243	242	247	268	0	2475
PB 2018 Total	40	939	251	251	241	241	243	269	0	2475
Delta	0	-12	0	6	2	1	4	-1	0	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
1993	--	--	--	--	--	--	9.6
1994	--	--	--	--	--	--	12.4
1995	--	--	--	--	--	--	4.3
1996	--	--	--	--	--	--	33.0
1997	--	--	--	--	--	--	32.6
1998	--	--	--	--	--	--	32.8
1999	--	--	--	--	--	--	20.2
2000	--	--	--	--	--	--	25.0
2001	--	--	--	--	--	--	20.6
2002	--	--	--	--	--	--	18.2
2003	--	--	--	--	--	--	46.5
2004	--	--	--	--	--	--	30.2
2005	--	--	--	--	--	--	84.0
2006	--	--	--	--	--	--	76.2
2007	--	--	--	--	--	--	89.4
2008	--	--	--	--	--	--	48.8
2009	--	--	--	--	--	--	26.5
2010	--	--	--	--	--	--	15.5
2011	--	--	--	--	--	--	31.7
2012	--	--	--	--	--	--	7.8
2013	--	--	--	--	--	--	8.2
2014	--	--	--	--	--	--	12.2
2015	--	--	--	--	--	--	16.0
2016	--	--	--	--	--	--	13.2
2017	--	--	--	--	--	--	2.1
Subtotal	40	--	--	--	--	--	717.0

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1993	--	--	--	--	--	--	10.9
1994	--	--	--	--	--	--	13.8
1995	--	--	--	--	--	--	4.7
1996	--	--	--	--	--	--	35.5
1997	--	--	--	--	--	--	34.6
1998	--	--	--	--	--	--	34.6
1999	--	--	--	--	--	--	21.0
2000	--	--	--	--	--	--	25.7
2001	--	--	--	--	--	--	20.9
2002	--	--	--	--	--	--	18.2
2003	--	--	--	--	--	--	45.9
2004	--	--	--	--	--	--	29.0
2005	--	--	--	--	--	--	78.6
2006	--	--	--	--	--	--	69.2
2007	--	--	--	--	--	--	79.2
2008	--	--	--	--	--	--	42.5
2009	--	--	--	--	--	--	22.8
2010	--	--	--	--	--	--	13.1
2011	--	--	--	--	--	--	26.2
2012	--	--	--	--	--	--	6.3
2013	--	--	--	--	--	--	6.6
2014	--	--	--	--	--	--	9.7
2015	--	--	--	--	--	--	12.5
2016	--	--	--	--	--	--	10.2
2017	--	--	--	--	--	--	1.6
Subtotal	40	--	--	--	--	--	673.3

Annual Funding 1507 Procurement Weapons 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
2008	25	32.7	--	6.0	38.7	2.3	41.0
2009	4	16.8	--	1.1	17.9	7.7	25.6
2010	36	39.5	--	1.0	40.5	10.2	50.7
2011	47	42.0	--	4.0	46.0	6.6	52.6
2012	82	66.1	--	9.4	75.5	8.4	83.9
2013	96	67.4	--	14.3	81.7	4.1	85.8
2014	116	82.1	--	8.4	90.5	3.6	94.1
2015	133	91.3	--	8.6	99.9	6.9	106.8
2016	141	105.7	--	12.0	117.7	3.8	121.5
2017	247	165.0	--	10.1	175.1	5.0	180.1
2018	251	158.1	--	10.4	168.5	14.9	183.4
2019	257	158.6	--	10.7	169.3	18.7	188.0
2020	243	152.7	--	11.0	163.7	20.2	183.9
2021	242	156.5	--	11.3	167.8	20.2	188.0
2022	247	160.8	--	11.6	172.4	3.0	175.4
2023	268	166.8	--	9.2	176.0	3.0	179.0
Subtotal	2435	1662.1	--	139.1	1801.2	138.6	1939.8

Annual Funding 1507 Procurement Weapons Procurement, Navy							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2008	25	28.2	--	5.1	33.3	2.0	35.3
2009	4	14.3	--	0.9	15.2	6.5	21.7
2010	36	33.0	--	0.8	33.8	8.5	42.3
2011	47	34.4	--	3.3	37.7	5.4	43.1
2012	82	53.4	--	7.5	60.9	6.8	67.7
2013	96	53.7	--	11.3	65.0	3.3	68.3
2014	116	64.5	--	6.6	71.1	2.8	73.9
2015	133	70.7	--	6.6	77.3	5.4	82.7
2016	141	80.5	--	9.1	89.6	2.9	92.5
2017	247	123.5	--	7.6	131.1	3.7	134.8
2018	251	116.3	--	7.6	123.9	11.0	134.9
2019	257	114.4	--	7.7	122.1	13.5	135.6
2020	243	108.0	--	7.8	115.8	14.3	130.1
2021	242	108.5	--	7.8	116.3	14.1	130.4
2022	247	109.3	--	8.0	117.3	2.0	119.3
2023	268	111.2	--	6.1	117.3	2.0	119.3
Subtotal	2435	1223.9	--	103.8	1327.7	104.2	1431.9

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	9/30/2008	1/18/2011
Approved Quantity	187	112
Reference	Milestone C ADM	Gate 6 Sufficiency Review
Start Year	2008	2008
End Year	2010	2011

Milestone C ADM of September 30, 2008 originally granted LRIP authority utilizing FY 2008 - FY 2010 funding, with a not-to-exceed quantity of 187 units. Deliveries for Phase I of LRIP, utilizing FY 2008 and FY 2009 funding, completed in October 2011. Deliveries for LRIP II, a Firm-Fixed-Price (FFP) contract utilizing FY 2010 funding, completed in November 2012. Due to delays in Initial Operational Test & Evaluation, and to avoid a production line break, the incorporation of a third LRIP into the AGM-88E AARGM Acquisition Strategy, utilizing FY 2011 funding, was approved on January 18, 2011 by the Assistant Secretary of the Navy (Research, Development, and Acquisition) at the Gate 6 Sufficiency Review. The total LRIP quantity remained under the not-to-exceed quantity of 187 units, which does not exceed the 10% guideline. The LRIP III FFP contract was awarded on October 31, 2011 at the Government's cost goal. Deliveries for LRIP III began in December 2012 and completed in December 2013.

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

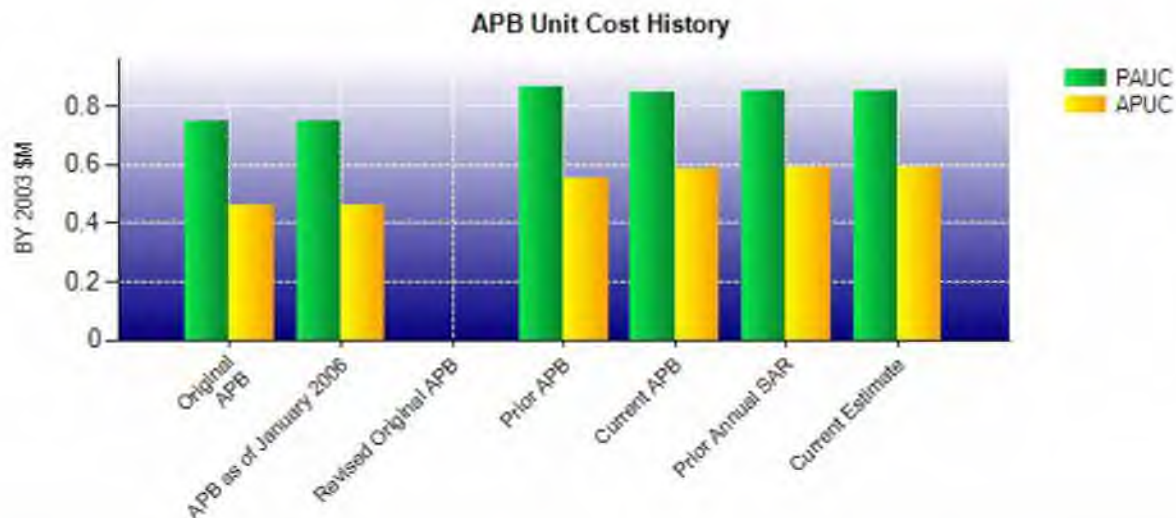
Country	Date of Sale	Quantity	Total Cost \$M	Description
Australia	(b)(3):10 USC § 130			Letter of Offer and Acceptance between the United States and Australia was amended on July 23, 2015 for the procurement of additional AGM-88E AARGM All Up Rounds and spares under FMS Case AT-P-AZN. (b)(3):10 USC § 130
Australia	(b)(3):10 USC § 130			Letter of Offer and Acceptance between the United States and Australia was signed on May 31, 2013 establishing FMS Case AT-P-AZN for the procurement of AGM-88E AARGM Captive Air Training Missiles, spares and support. (b)(3):10 USC § 130
Italy	11/15/2005	160	132.8	Cooperative Development Memorandum of Agreement (MOA) between Italy and the United States was signed on November 15, 2005. Cooperative Production, Sustainment and Follow-on Development MOA between Italy and the United States was signed on November 18, 2009. The quantity of 160 represents the total estimated number of missiles that Italy is expected to receive through Full Rate Production.

Notes**Nuclear Costs**

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2003 \$M	BY 2003 \$M	% Change
	Current UCR Baseline (Jun 2016 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	2098.5	2105.2	
Quantity	2475	2475	
Unit Cost	0.848	0.851	+0.35
Average Procurement Unit Cost			
Cost	1425.5	1431.9	
Quantity	2435	2435	
Unit Cost	0.585	0.588	+0.51
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2003 \$M	BY 2003 \$M	% Change
	Original UCR Baseline (Jul 2003 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	1339.8	2105.2	
Quantity	1790	2475	
Unit Cost	0.748	0.851	+13.77
Average Procurement Unit Cost			
Cost	806.5	1431.9	
Quantity	1750	2435	
Unit Cost	0.461	0.588	+27.55



APB Unit Cost History					
Item	Date	BY 2003 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Jul 2003	0.748	0.461	0.844	0.556
APB as of January 2006	Jul 2003	0.748	0.461	0.844	0.556
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Nov 2012	0.866	0.554	1.056	0.733
Current APB	Jun 2016	0.848	0.585	1.076	0.800
Prior Annual SAR	Dec 2016	0.851	0.588	1.079	0.802
Current Estimate	Dec 2017	0.851	0.588	1.073	0.797

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.844	0.039	-0.026	0.028	0.010	0.053	0.000	0.022	0.126	0.970

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.970	-0.017	-0.055	0.052	0.032	0.083	0.000	0.008	0.103	1.073

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.556	0.033	-0.006	0.026	0.000	0.039	0.000	0.023	0.115	0.671

Current SAR Baseline to Current Estimate (TY \$M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.671	-0.018	0.014	0.052	0.000	0.070	0.000	0.008	0.126	0.797

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	Apr 2003	Apr 2003	Jun 2003
Milestone C	N/A	Mar 2008	Mar 2008	Sep 2008
IOC	N/A	May 2010	Nov 2010	Jul 2012
Total Cost (TY \$M)	N/A	1510.9	1861.4	2656.8
Total Quantity	N/A	1790	1919	2475
PAUC	N/A	0.844	0.970	1.073

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	600.3	1261.1	--	1861.4
Previous Changes				
Economic	+0.1	-32.1	--	-32.0
Quantity	--	+407.5	--	+407.5
Schedule	+2.4	+125.1	--	+127.5
Engineering	+79.5	--	--	+79.5
Estimating	+34.7	+162.1	--	+196.8
Other	--	--	--	--
Support	--	+29.5	--	+29.5
Subtotal	+116.7	+692.1	--	+808.8
Current Changes				
Economic	--	-11.3	--	-11.3
Quantity	--	--	--	--
Schedule	--	+0.6	--	+0.6
Engineering	--	--	--	--
Estimating	--	+7.5	--	+7.5
Other	--	--	--	--
Support	--	-10.2	--	-10.2
Subtotal	--	-13.4	--	-13.4
Total Changes	+116.7	+678.7	--	+795.4
CE - Cost Variance	717.0	1939.8	--	2656.8
CE - Cost & Funding	717.0	1939.8	--	2656.8

Summary BY 2003 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	578.9	949.6	--	1528.5
Previous Changes				
Economic	--	--	--	--
Quantity	--	+274.7	--	+274.7
Schedule	+1.9	+70.9	--	+72.8
Engineering	+64.2	--	--	+64.2
Estimating	+28.3	+117.5	--	+145.8
Other	--	--	--	--
Support	--	+20.2	--	+20.2
Subtotal	+94.4	+483.3	--	+577.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	--	+6.1	--	+6.1
Other	--	--	--	--
Support	--	-7.1	--	-7.1
Subtotal	--	-1.0	--	-1.0
Total Changes	+94.4	+482.3	--	+576.7
CE - Cost Variance	673.3	1431.9	--	2105.2
CE - Cost & Funding	673.3	1431.9	--	2105.2

Previous Estimate: December 2016

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-11.3
Rephasing of procurement buy profile from FY 2016 - FY 2023. (Schedule)	0.0	+0.6
Revised estimate to reflect funding to support obsolescence and engineering change investments. (Estimating)	+5.4	+7.2
Revised estimate based upon updated contractor indirect rates. (Estimating)	+19.2	+26.9
Revised estimate to reflected projected savings from Radio Frequency Processor investment. (Estimating)	-14.1	-20.2
Revised estimate to reflect updated engineering support requirements. (Estimating)	-6.6	-9.5
Adjustment for current and prior escalation. (Estimating)	+2.2	+3.1
Adjustment for current and prior escalation. (Support)	+0.2	+0.2
Decrease in Other Support due to updated container unit costs. (Support)	-7.3	-10.4
Procurement Subtotal	-1.0	-13.4

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: AARGM FRP 6/7
Contractor: Orbital Alliant TechSystems (OATK)
Contractor Location: 9401 Corbin Avenue
 Los Angeles, CA 91324
Contract Number: N00019-17-C-0005
Contract Type: Firm Fixed Price (FFP)
Award Date: August 31, 2017
Definitization Date: August 31, 2017

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
156.8	N/A	236	175.0	N/A	261	175.0	175.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the Italian Air Force (ITAF) modification to procure 25 ITAF All Up Rounds (AUR) and two additional United States Navy (USN) AURs. The USN quantities were awarded on August 31, 2017 for \$156.8M. The ITAF quantities were awarded on October 27, 2017 for \$18.2M.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP) contract.

Notes

This is the first time this contract is being reported.

The contract value of \$175.03M includes \$18.20M of Italian requirements for 25 AURs and contractor production support.

The quantity reflects United States and Italian quantities.

Contract Identification

Appropriation: Procurement
Contract Name: AARGM FRP 4/5
Contractor: Orbital Alliant TechSystems (OATK)
Contractor Location: 9401 Corbin Avenue
 Los Angeles, CA 91324
Contract Number: N00019-15-C-0123
Contract Type: Firm Fixed Price (FFP)
Award Date: September 03, 2015
Definitization Date: September 03, 2015

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
118.7	N/A	154	257.2	N/A	330	257.2	257.2

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to a modification to execute Life of Type procurements for obsolete parts for United States Navy / Italian Air Force (USN and ITAF) for \$.187M and procure additional Radome assemblies and filters (USN) for \$.359M.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP) contract.

Notes

The contract current value of \$257.2M includes \$11.4M of Italian requirements for 19 All Up Rounds (AURs).

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	40	40	40	100.00%
Production	2435	520	2435	21.36%
Total Program Quantity Delivered	2475	560	2475	22.63%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	2656.8	Years Appropriated	26
Expended to Date	1336.5	Percent Years Appropriated	83.87%
Percent Expended	50.30%	Appropriated to Date	1742.5
Total Funding Years	31	Percent Appropriated	65.59%

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

The 40 assets procured under the development phase are not fleet representative assets, and are not reflected in the AARGM sustainment strategy.

Operating and Support Cost

Cost Estimate Details

Date of Estimate: January 08, 2016
Source of Estimate: POE
Quantity to Sustain: 2435
Unit of Measure: Total Quantity
Service Life per Unit: 15.00 Years
Fiscal Years in Service: FY 2012 - FY 2039

The estimate concentrates on the costs for AGM-88E AARGM unique components. The estimate does not include any costs related to the HARM Government Furnished Hardware (rocket motor and warhead). AGM-88E AARGM has a 60 month Serviceable In-Service Time Maintenance and Reliability Monitoring Program. The 2435 quantity to sustain does not include 40 developmental assets that are not maintained.

Sustainment Strategy

The AGM-88E AARGM sustainment approach is leveraged off of the existing High Speed Anti-Radiation Missile (HARM) maintenance structure. The system is supported via a modified three level maintenance concept utilizing Organizational (O), Intermediate (I), Depot levels and a Designated Overhaul Point (DOP) for the AGM-88E AARGM unique components (guidance and control sections). The Original Equipment Manufacturer is the DOP for guidance and control section repair based on the completed Joint Depot Source of Repair Decision process. There are no changes to the manpower requirements or manning levels at activities that will operate and provide support to AGM-88E AARGM as O-level and I-level; capabilities are consistent with the HARM operations.

Antecedent Information

The Antecedent System is the HARM. Data is based on a HARM period of performance of FY 1990 - FY 2009 (20 years), vice FY 2011 - FY 2039 (29 years) for AARGM. Historical O&S costs were collected from the Naval Visibility & Management of Operating and Support Costs database. Antecedent costs are not normalized to the AGM-88E AARGM parameters.

Annual O&S Costs BY2003 \$M			
Cost Element	AGM-88E AARGM Average Annual Cost Per Total Quantity	AGM-88 HARM (Antecedent) Average Annual Cost Per Total Quantity	
Unit-Level Manpower	0.000	0.000	
Unit Operations	0.000	0.000	
Maintenance	0.590	1.800	
Sustaining Support	3.300	1.700	
Continuing System Improvements	1.710	1.600	
Indirect Support	0.000	0.000	
Other	0.000	0.000	
Total	5.600	5.100	

Item	Total O&S Cost \$M			
	AGM-88E AARGM			AGM-88 HARM (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	162.6	178.9	162.6	101.3
Then Year	254.8	N/A	260.2	N/A

Equation to Translate Annual Cost to Total Cost

Total Cost / Total Years of Service = Annual Cost

\$162.6M / 29 years = \$5.6M per year

O&S Cost Variance		
Category	BY 2003 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2016 SAR	162.6	
Programmatic/Planning Factors	0.0	
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	0.0	
Current Estimate	162.6	

Disposal Estimate Details

Date of Estimate: January 08, 2016

Source of Estimate: POE

Disposal/Demilitarization Total Cost (BY 2003 \$M): Total costs for disposal of all Total Quantity are 8.6

Total costs for disposal of all 2,435 units is \$8.6M (BY\$03).