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 2016 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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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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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 November 7, 2012

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, and 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. Objective aircraft include EA-6B, F-16C/J and F-35 external carriage (post IOC).

Executive Summary

The FRP Phase is scheduled to continue through 2020. A total of 1,879 AGM-88E AARGM (including Captive Air Training Missiles (CATMs) and spare Guidance and Control Sections) are planned for production. The contract for the third lot of FRP was awarded April 23, 2014 within program cost goals. The Cooperative Production, Sustainment and follow-on Development Memorandum of Agreement between the United States and Italy remains in effect. Letter of Offer and Acceptance between the United States and Australia signed May 31, 2013 established an FMS Case to procure AARGM Captive Air Training Missiles and support. Block 1 Upgrade (software update) entered Integrated Test (Follow-on Test and Evaluation) in August 2014, with fleet delivery estimated in 1st Quarter FY 2017.

Due to significant program restructuring and budget profile adjustments, AARGM's current Average Procurement Unit Cost exceeds the JROC Tripwire threshold (25% above original baseline) when measured against the original Milestone B 2003 baseline. AARGM successfully completed a JROC Tripwire review in May 2014, and no further action was required.

President's Budget FY16 includes development and procurement funding for the AARGM Extended Range (AARGM-ER) program. Anticipated to be a distinct acquisition effort, all funding related to AARGM-ER is excluded from this SAR.

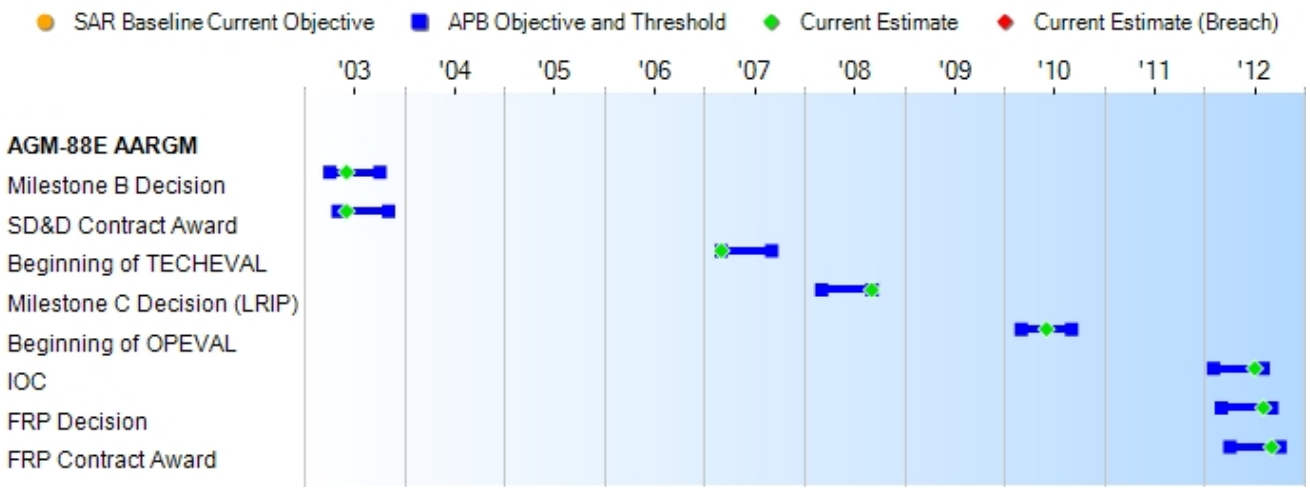
There are no significant software-related issues with this program at this time.

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

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	.98
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, authentic-ation, confidential-ity, 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 integrated	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, authentic-ation, confidential-ity, 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 integrated	The system must fully support execution of joint critical operational activities identified in the applicable joint and system intregrated 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 indentified 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, authentic-ation, confidential-ity 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 in the applicable joint	The system must fully support execution of joint critical operational activities identified in the applicable joint and system intregrated 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 indentified 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, authentica-tion, 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	The system must fully support execution of joint critical operational activities identified in the applicable joint and system intregrated 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 indentified 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, authentica-tion, 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

architecture views.	architecture views.	and system integrated architecture views.		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

Capability Production Document (CPD) dated April 1, 2010

Change Explanations

None

Acronyms and Abbreviations

ATO - Authority to Operate
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

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		

Appn		BA	PE
Navy	1507	06	0204162N

Line Item	Name		
6120	Initial Spares	(Shared)	(Sunk)

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	Current Estimate
RDT&E	578.9	620.3	682.3	671.5	600.3	648.6	714.7
Procurement	949.6	1040.8	1123.7	1102.7	1261.1	1377.6	1464.2
Flyaway	--	--	--	1048.0	--	--	1394.6
Recurring	--	--	--	969.2	--	--	1291.5
Non Recurring	--	--	--	78.8	--	--	103.1
Support	--	--	--	54.7	--	--	69.6
Other Support	--	--	--	47.6	--	--	61.1
Initial Spares	--	--	--	7.1	--	--	8.5
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	1661.1	N/A	1774.2	1861.4	2026.2	2178.9

Confidence Level

Confidence Level of cost estimate for current APB: 50%

The Acquisition Program Baseline (APB) cost estimate provides sufficient resources to execute the program under normal conditions, encountering average levels of technical, schedule, and programmatic risk and external interference. Based on the rigor in methods used in building estimates, strong adherence to the collection and use of historical cost information, and review of applied assumptions, the program office projects that it is about as likely the estimate will prove too low or too high for the program as described.

Cost Notes

AARGM ER WPN and RDT&E are not included in numbers since AARGM ER is not reported as an MDAP.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	40	40	40
Procurement	1879	1879	1879
Total	1919	1919	1919

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2016 President's Budget / December 2014 SAR (TY$ M)									
Appropriation	Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	Total
RDT&E	685.7	16.1	12.9	0.0	0.0	0.0	0.0	0.0	714.7
Procurement	431.8	106.5	122.3	195.5	224.8	224.5	158.8	0.0	1464.2
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2016 Total	1117.5	122.6	135.2	195.5	224.8	224.5	158.8	0.0	2178.9
PB 2015 Total	1117.5	127.8	129.1	196.7	226.1	235.7	160.0	0.0	2192.9
Delta	0.0	-5.2	6.1	-1.2	-1.3	-11.2	-1.2	0.0	-14.0

Quantity Summary										
FY 2016 President's Budget / December 2014 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	Total
Development	40	0	0	0	0	0	0	0	0	40
Production	0	391	116	138	296	356	358	224	0	1879
PB 2016 Total	40	391	116	138	296	356	358	224	0	1919
PB 2015 Total	40	389	116	138	296	356	358	226	0	1919
Delta	0	2	0	0	0	0	0	-2	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	--	--	--	--	--	--	16.1
2016	--	--	--	--	--	--	12.9
Subtotal	40	--	--	--	--	--	714.7

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	--	--	--	--	--	--	12.6
2016	--	--	--	--	--	--	9.9
Subtotal	40	--	--	--	--	--	671.5

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	87	65.5	--	14.3	79.8	4.1	83.9
2014	110	82.1	--	8.4	90.5	3.6	94.1
2015	116	94.1	--	8.7	102.8	3.7	106.5
2016	138	106.4	--	12.3	118.7	3.6	122.3
2017	296	180.7	--	9.6	190.3	5.2	195.5
2018	356	209.7	--	9.8	219.5	5.3	224.8
2019	358	209.3	--	10.0	219.3	5.2	224.5
2020	224	146.6	--	8.5	155.1	3.7	158.8
Subtotal	1879	1291.5	--	103.1	1394.6	69.6	1464.2

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	53.3	--	7.5	60.8	6.8	67.6
2013	87	52.0	--	11.3	63.3	3.3	66.6
2014	110	64.2	--	6.5	70.7	2.8	73.5
2015	116	72.3	--	6.7	79.0	2.8	81.8
2016	138	80.3	--	9.3	89.6	2.7	92.3
2017	296	133.8	--	7.1	140.9	3.8	144.7
2018	356	152.2	--	7.2	159.4	3.8	163.2
2019	358	148.9	--	7.2	156.1	3.7	159.8
2020	224	102.3	--	5.9	108.2	2.6	110.8
Subtotal	1879	969.2	--	78.8	1048.0	54.7	1102.7

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 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.

Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost $M	Description
Australia	5/31/2013	8	37.1	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 and support. The missiles are expected to deliver in FY 2015 with support continuing through FY 2018.
Italy	11/15/2005	232	127.7	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 232 represents the total estimated number of missiles that Italy is expected to receive through Full Rate Production.

Notes

Nuclear Costs

None

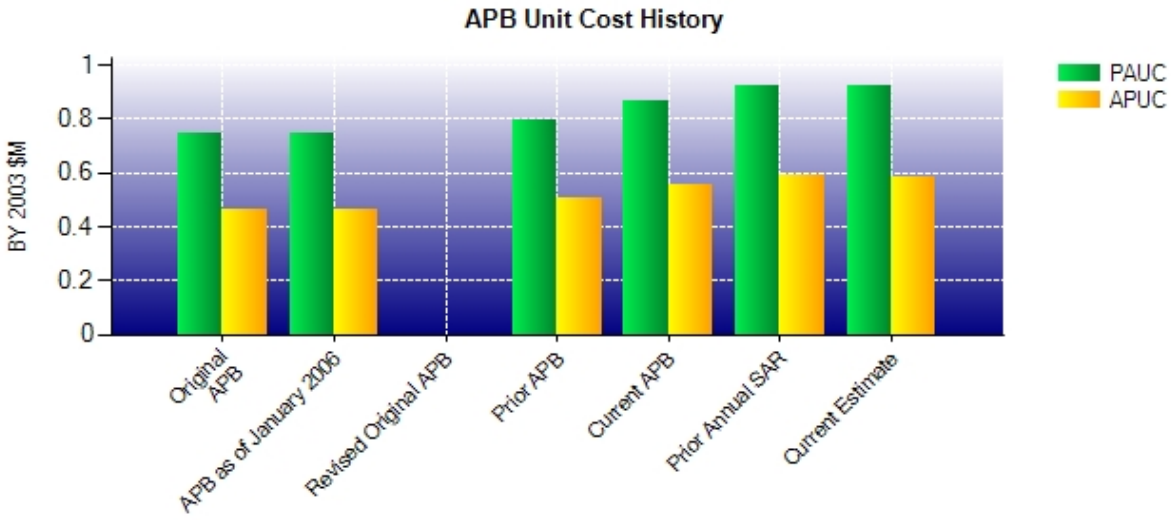
Unit Cost

Unit Cost Report

Item	BY 2003 $M Current UCR Baseline (Nov 2012 APB)	BY 2003 $M Current Estimate (Dec 2014 SAR)	% Change
Program Acquisition Unit Cost			
Cost	1661.1	1774.2	
Quantity	1919	1919	
Item	0.866	0.925	+6.81
Average Procurement Unit Cost			
Cost	1040.8	1102.7	
Quantity	1879	1879	
Unit Cost	0.554	0.587	+5.96

Item	BY 2003 $M Original UCR Baseline (Jul 2003 APB)	BY 2003 $M Current Estimate (Dec 2014 SAR)	% Change
Program Acquisition Unit Cost			
Cost	1339.8	1774.2	
Quantity	1790	1919	
Unit Cost	0.748	0.925	+23.66
Average Procurement Unit Cost			
Cost	806.5	1102.7	
Quantity	1750	1879	
Unit Cost	0.461	0.587	+27.33

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 2011	0.797	0.505	0.970	0.671
Current APB	Nov 2012	0.866	0.554	1.056	0.733
Prior Annual SAR	Dec 2013	0.926	0.592	1.143	0.791
Current Estimate	Dec 2014	0.925	0.587	1.135	0.779

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	-0.014	0.000	0.060	0.041	0.104	0.000	-0.026	0.165	1.135

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	-0.014	0.000	0.061	0.000	0.089	0.000	-0.027	0.109	0.779

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	2178.9
Total Quantity	N/A	1790	1919	1919
PAUC	N/A	0.844	0.970	1.135

Cost Variance

Summary TY $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Production Estimate)	600.3	1261.1	--	1861.4
Previous Changes				
Economic	+0.6	-17.9	--	-17.3
Quantity	--	--	--	--
Schedule	--	+114.9	--	+114.9
Engineering	+79.5	--	--	+79.5
Estimating	+27.0	+179.0	--	+206.0
Other	--	--	--	--
Support	--	-51.6	--	-51.6
Subtotal	+107.1	+224.4	--	+331.5
Current Changes				
Economic	-0.5	-9.0	--	-9.5
Quantity	--	--	--	--
Schedule	--	-0.7	--	-0.7
Engineering	--	--	--	--
Estimating	+7.8	-12.7	--	-4.9
Other	--	--	--	--
Support	--	+1.1	--	+1.1
Subtotal	+7.3	-21.3	--	-14.0
Total Changes	+114.4	+203.1	--	+317.5
CE - Cost Variance	714.7	1464.2	--	2178.9
CE - Cost & Funding	714.7	1464.2	--	2178.9

Summary BY 2003 $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Production Estimate)	578.9	949.6	--	1528.5
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+67.4	--	+67.4
Engineering	+64.2	--	--	+64.2
Estimating	+22.4	+131.9	--	+154.3
Other	--	--	--	--
Support	--	-37.4	--	-37.4
Subtotal	+86.6	+161.9	--	+248.5
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	-0.6	--	-0.6
Engineering	--	--	--	--
Estimating	+6.0	-9.2	--	-3.2
Other	--	--	--	--
Support	--	+1.0	--	+1.0
Subtotal	+6.0	-8.8	--	-2.8
Total Changes	+92.6	+153.1	--	+245.7
CE - Cost Variance	671.5	1102.7	--	1774.2
CE - Cost & Funding	671.5	1102.7	--	1774.2

Previous Estimate: December 2013

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.5
Revised FY 2016 funding due to additional flight hours and test events required to support Block 1 Follow On Test & Evaluation. (Estimating)	+5.6	+7.3
Adjustment for current and prior escalation. (Estimating)	+0.3	+0.4
Revised estimate to reflect the application of new out year escalation indices. (Estimating)	+0.1	+0.1
RDT&E Subtotal	+6.0	+7.3

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-9.0
Revised cost due to reduction of 2 missiles in FY 2020 as a result of an additional 2 missiles procured in FY 2014. (Schedule)	-0.6	-0.7
Revised estimate to reflect Congressional reduction in FY 2015. (Estimating)	-4.1	-5.2
Revised estimate to reflect budget reductions across the FYDP. (Estimating)	-4.6	-6.4
Revised estimate to reflect limitations in production capacity. (Estimating)	-6.9	-9.8
Adjustment for current and prior escalation. (Estimating)	+0.8	+1.1
Revised estimate to reflect the application of new out year escalation indices. (Estimating)	+5.6	+7.6
Adjustment for current and prior escalation. (Support)	+0.2	+0.2
Increase in other support due to revised estimate. (Support)	+0.8	+0.9
Procurement Subtotal	-8.8	-21.3

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: AARGM FRP 2/3
Contractor: Alliant TechSystems (ATK)
Contractor Location: 9401 Corbin Avenue
Los Angeles, CA 91324
Contract Number: N00019-13-C-0162
Contract Type: Firm Fixed Price (FFP)
Award Date: September 25, 2013
Definitization Date: September 25, 2013

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
102.4	N/A	123	198.6	N/A	248	198.6	198.6

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the subsequent exercise of the FRP 3 Option (USN/ITAF). The USN quantities were awarded on April, 23 2014, for $83.9M. The ITAF quantities were awarded on August 7, 2014, for $12.7M.

Cost and Schedule Variance Explanations

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

Contract Identification

Appropriation: Procurement

Contract Name: AARGM FRP 1

Contractor: Alliant TechSystems (ATK)

Contractor Location: 9401 Corbin Avenue
Los Angeles, CA 91324

Contract Number: N00019-12-C-0113

Contract Type: Firm Fixed Price (FFP)

Award Date: September 10, 2012

Definitization Date: September 10, 2012

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
70.6	N/A	76	78.7	N/A	81	78.7	78.7

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the subsequent exercise of option contract line item number for Italian units due to late receipt of funds. An additional $3.2M in Italian funding was added for this effort. An additional $2.6M in funds were also provided to incorporate Statement of Work for Stage 2 of the Front End Assembly Transition Plan. An additional $1.84M in funds were provided to execute Cost Improvement Initiatives.

Cost and Schedule Variance Explanations

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

Notes

The contract current value of $78.7M includes $8.79M of Italian requirements for seven All Up Rounds, two Captive Air Training Missiles, and contractor production support.

The quantity reflects United States and Italian quantities.

Deliveries and Expenditures

Deliveries				
Delivered to Date	**Planned to Date**	**Actual to Date**	**Total Quantity**	**Percent Delivered**
Development	40	40	40	100.00%
Production	169	169	1879	8.99%
Total Program Quantity Delivered	209	209	1919	10.89%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	2178.9	Years Appropriated	23
Expended to Date	986.9	Percent Years Appropriated	82.14%
Percent Expended	45.29%	Appropriated to Date	1240.1
Total Funding Years	28	Percent Appropriated	56.91%

The above data is current as of January 31, 2015.

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: June 13, 2012
Source of Estimate: SCP
Quantity to Sustain: 1879
Unit of Measure: Total Quantity
Service Life per Unit: 15.00 Years
Fiscal Years in Service: FY 2012 - FY 2036

The estimate concentrates on the costs for AGM-88E AARGM unique components. AGM-88E AARGM has a sixty (60) month Serviceable In-Service Time Maintenance and Reliability Monitoring Program. The total quantity of missiles to be procured is 1879. Weapon service life is 15 years per AGM-88E AARGM All Up Round. The O&S life is 26 years. The planned last production lot buy is FY 2020. The last unit delivery would be FY 2023 with a corresponding service life assumption through FY 2036. The 1879 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

Antecedent is the HARM. Data is based on a HARM period of performance of FY 1990 - FY 2009 (20 years), vice FY 2011 - FY 2036 (26 years) for AARGM. Historical O&S costs were collected from 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	0.600	1.800
Sustaining Support	3.200	1.700
Continuing System Improvements	1.700	1.600
Indirect Support	0.000	0.000
Other	0.000	0.000
Total	5.500	5.100

Item	Total O&S Cost $M			
	AGM-88E AARGM			AGM-88 HARM (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	142.6	156.9	142.6	101.3
Then Year	215.8	N/A	215.8	N/A

Equation to Translate Annual Cost to Total Cost

Equation to Translate Annual Cost to Total Cost: Total Cost / Total Years of Service = Annual Cost

$142.6M / 26 = $5.5M

O&S Cost Variance		
Category	**BY 2003 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2013 SAR	142.6	
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	142.6	

Disposal Estimate Details

Date of Estimate: June 13, 2012

Source of Estimate: SCP

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