



## 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 2015 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

## Table of Contents

Common Acronyms and Abbreviations .....	3
Program Information .....	4
Responsible Office .....	4
References .....	4
Mission and Description .....	5
Executive Summary .....	6
Threshold Breaches .....	7
Schedule .....	8
Performance .....	9
Track to Budget .....	12
Cost and Funding .....	13
Low Rate Initial Production .....	19
Foreign Military Sales .....	20
Nuclear Costs .....	20
Unit Cost .....	21
Cost Variance .....	24
Contracts .....	27
Deliveries and Expenditures .....	29
Operating and Support Cost .....	30

## Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
BA - Budget Authority/Budget Activity  
BY - Base Year  
DAMIR - Defense Acquisition Management Information Retrieval  
Dev Est - Development Estimate  
DoD - Department of Defense  
DSN - Defense Switched Network  
Econ - Economic  
Eng - Engineering  
Est - Estimating  
FMS - Foreign Military Sales  
FY - Fiscal Year  
IOC - Initial Operational Capability  
\$K - Thousands of Dollars  
LRIP - Low Rate Initial Production  
\$M - Millions of Dollars  
MILCON - Military Construction  
N/A - Not Applicable  
O&S - Operating and Support  
Oth - Other  
PAUC - Program Acquisition Unit Cost  
PB - President's Budget  
PE - Program Element  
Proc - Procurement  
Prod Est - Production Estimate  
QR - Quantity Related  
Qty - Quantity  
RDT&E - Research, Development, Test, and Evaluation  
SAR - Selected Acquisition Report  
Sch - Schedule  
Spt - Support  
TBD - To Be Determined  
TY - Then Year  
UCR - Unit Cost Reporting

## 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

### Responsible Office

CAPT Albert Mousseau	<b>Phone</b>	301-757-7422
Program Executive Office (Unmanned Aviation and Strike Weapons)	<b>Fax</b>	301-757-7418
Attn: PMA-242, Bldg. 2272, R252	<b>DSN Phone</b>	757-7422
47123 Buse Road, Unit IPT	<b>DSN Fax</b>	--
Patuxent River, MD 20670-1557		
<a href="mailto:albert.g.mousseau@navy.mil">albert.g.mousseau@navy.mil</a>	<b>Date Assigned</b>	June 20, 2013

## 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 incorporated in 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 has been selected by the Navy for use on the F/A-18C/D and will be compatible with the F/A-18E/F, EA-6B (and follow-on aircraft), F-16C/J and F-35 external carriage (post IOC).

## Executive Summary

The following accomplishments and developments occurred since the December 2012 SAR:

The Full Rate Production (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 second lot of FRP was awarded September 25, 2013 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 Foreign Military Sales Case to procure AGM-88E AARGM CATMs and support.

AGM-88E AARGM delivered its 100th All Up Round during FY 2013. All forty-seven US LRIP III missiles were delivered. Front End Assembly manufacturing transition to MBDA Italy (work share) began in August 2013 for the FRP1 lot. Two successful International Cooperative Program Executive Steering Committee meetings were held. As a result of FY 2013 sequestration the program's FY 2011 WPN budget was reduced by \$1.73M, FY 2013 by \$5.6M and the RDT&E budget was reduced by \$849K. The program also experienced significant funding reductions to the WPN budget that totaled \$66.6M in FY 2014 through FY 2016. These reductions coupled with Italian program restructuring and updated program estimate have caused the program to exceed the original baseline (MS-B 2003) APUC by 28%. AGM-88E AARGM baseline capabilities are fielded/deployed (to both land and carrier based squadrons). The Block 1 software update program will enter Follow-On Test and Evaluation in the 4th quarter FY 2014. Changes to this SAR include FY 2011 through FY 2016 RDT&E funding associated with Block 1 that was not previously reported.

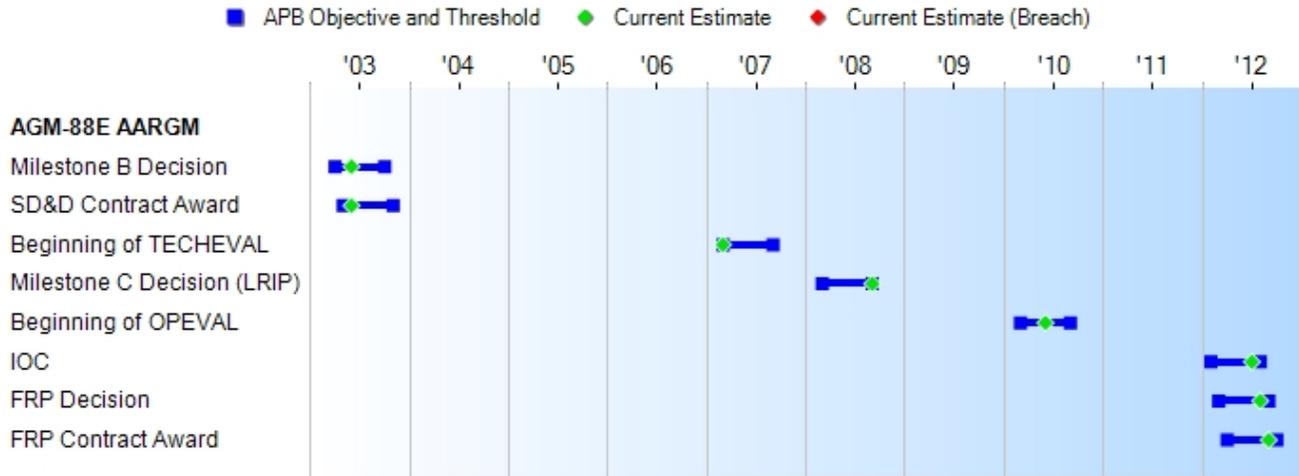
There are no significant software-related issues with this program at this time.

## Threshold Breaches

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

Nunn-McCurdy Breaches		
<b>Current UCR Baseline</b>		
	PAUC	None
	APUC	None
<b>Original UCR Baseline</b>		
	PAUC	None
	APUC	None

### Schedule



Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate
		Objective	Threshold	
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

- FRP - Full Rate Production
- OPEVAL - Operational Evaluation
- SD&D - System Development & Demonstration
- TECHEVAL - Technical Evaluation

## Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
		>=0.95	>=0.9		
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-mandated GIG KIPs identified in the KIP declaration table; (3) NCOW RM Enterprise Services; (4) IA requirements	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-mandated GIG KIPs identified in the KIP declaration table; (3) NCOW RM Enterprise Services; (4) IA requirements	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	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	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

	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 integrated architecture views.	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 integrated architecture views.	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 in the applicable joint and system integrated architecture views.	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 in the applicable joint and system integrated architecture views.	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 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 Source**

Capability Production Document (CPD) dated April 1, 2010

**Change Explanations**

None

**Acronyms and Abbreviations**

ATO - Authority to Operate  
CPD - Capability Production Document  
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 Memo

Procurement funding includes both funding from the High-Speed Anti-Radiation Guided Missile (HARM) Mods PE (BA 02) and the AGM-88E AARGM Initial Spares PE (BA 06).

Previous year RDT&E funding was sunk. It was determined that the funding should be coded for the Block 1 software update to AGM-88E AARGM.

### RDT&E

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

### Procurement

Appn	BA	PE	
Navy 1507	02	0204162N	
		<b>Line Item</b>	<b>Name</b>
		23270	HARM Mods
Navy 1507	06	0204162N	
		<b>Line Item</b>	<b>Name</b>
		61202	Initial Spares (Shared) (Sunk)

## Cost and Funding

### Cost Summary

#### Total Acquisition Cost and Quantity

Appropriation	BY2003 \$M			BY2003 \$M	TY \$M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold	Current Estimate	Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	578.9	620.3	682.3	665.5	600.3	648.6	707.4
Procurement	949.6	1040.8	1123.7	1111.5	1261.1	1377.6	1485.5
Flyaway	--	--	--	1057.8	--	--	1416.8
Recurring	--	--	--	974.9	--	--	1308.0
Non Recurring	--	--	--	82.9	--	--	108.8
Support	--	--	--	53.7	--	--	68.7
Other Support	--	--	--	46.6	--	--	60.2
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	1777.0	1861.4	2026.2	2192.9

Confidence Level for Current APB Cost 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.

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

## Cost and Funding

### Funding Summary

#### Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	673.5	12.2	16.1	5.6	0.0	0.0	0.0	0.0	707.4
Procurement	337.7	94.1	111.7	123.5	196.7	226.1	235.7	160.0	1485.5
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 2015 Total	1011.2	106.3	127.8	129.1	196.7	226.1	235.7	160.0	2192.9
PB 2014 Total	983.4	111.9	126.2	157.9	160.7	189.7	189.7	93.5	2013.0
Delta	27.8	-5.6	1.6	-28.8	36.0	36.4	46.0	66.5	179.9

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	40	0	0	0	0	0	0	0	0	40
Production	0	281	108	116	138	296	356	358	226	1879
PB 2015 Total	40	281	108	116	138	296	356	358	226	1919
PB 2014 Total	40	284	143	188	252	263	312	315	122	1919
Delta	0	-3	-35	-72	-114	33	44	43	104	0

## Cost and Funding

### Annual Funding By Appropriation

#### Annual Funding TY\$

#### 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
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	--	--	--	--	--	--	5.6
<b>Subtotal</b>	<b>40</b>	--	--	--	--	--	<b>707.4</b>

## Annual Funding BY\$

## 1319 | RDT&amp;E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2003 \$M	Non End Item Recurring Flyaway BY 2003 \$M	Non Recurring Flyaway BY 2003 \$M	Total Flyaway BY 2003 \$M	Total Support BY 2003 \$M	Total Program BY 2003 \$M
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	--	--	--	--	--	--	9.6
2015	--	--	--	--	--	--	12.4
2016	--	--	--	--	--	--	4.2
<b>Subtotal</b>	<b>40</b>	--	--	--	--	--	<b>665.5</b>

**Annual Funding TY\$**  
**1507 | Procurement | Weapons Procurement, Navy**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway TY \$M</b>	<b>Non End Item Recurring Flyaway TY \$M</b>	<b>Non Recurring Flyaway TY \$M</b>	<b>Total Flyaway TY \$M</b>	<b>Total Support TY \$M</b>	<b>Total Program TY \$M</b>
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	108	82.1	--	8.5	90.6	3.5	94.1
2015	116	94.1	--	14.0	108.1	3.6	111.7
2016	138	107.6	--	12.3	119.9	3.6	123.5
2017	296	181.9	--	9.7	191.6	5.1	196.7
2018	356	211.0	--	9.8	220.8	5.3	226.1
2019	358	220.4	--	10.1	230.5	5.2	235.7
2020	226	148.3	--	8.6	156.9	3.1	160.0
<b>Subtotal</b>	<b>1879</b>	<b>1308.0</b>	<b>--</b>	<b>108.8</b>	<b>1416.8</b>	<b>68.7</b>	<b>1485.5</b>

**Annual Funding BY\$**  
**1507 | Procurement | Weapons Procurement, Navy**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2003 \$M</b>	<b>Non End Item Recurring Flyaway BY 2003 \$M</b>	<b>Non Recurring Flyaway BY 2003 \$M</b>	<b>Total Flyaway BY 2003 \$M</b>	<b>Total Support BY 2003 \$M</b>	<b>Total Program BY 2003 \$M</b>
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	5.3	43.0
2012	82	53.2	--	7.6	60.8	6.8	67.6
2013	87	51.9	--	11.4	63.3	3.2	66.5
2014	108	63.9	--	6.6	70.5	2.7	73.2
2015	116	71.9	--	10.7	82.6	2.7	85.3
2016	138	80.6	--	9.2	89.8	2.7	92.5
2017	296	133.5	--	7.2	140.7	3.7	144.4
2018	356	151.9	--	7.0	158.9	3.8	162.7
2019	358	155.5	--	7.1	162.6	3.7	166.3
2020	226	102.6	--	6.0	108.6	2.1	110.7
<b>Subtotal</b>	<b>1879</b>	<b>974.9</b>	<b>--</b>	<b>82.9</b>	<b>1057.8</b>	<b>53.7</b>	<b>1111.5</b>

## Low Rate Initial Production

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

Milestone C Acquisition Decision Memorandum (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	Memo
Australia	5/31/2013	8	37.1	Letter of Offer and Acceptance between the United States and Australia was signed on 31 May 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.

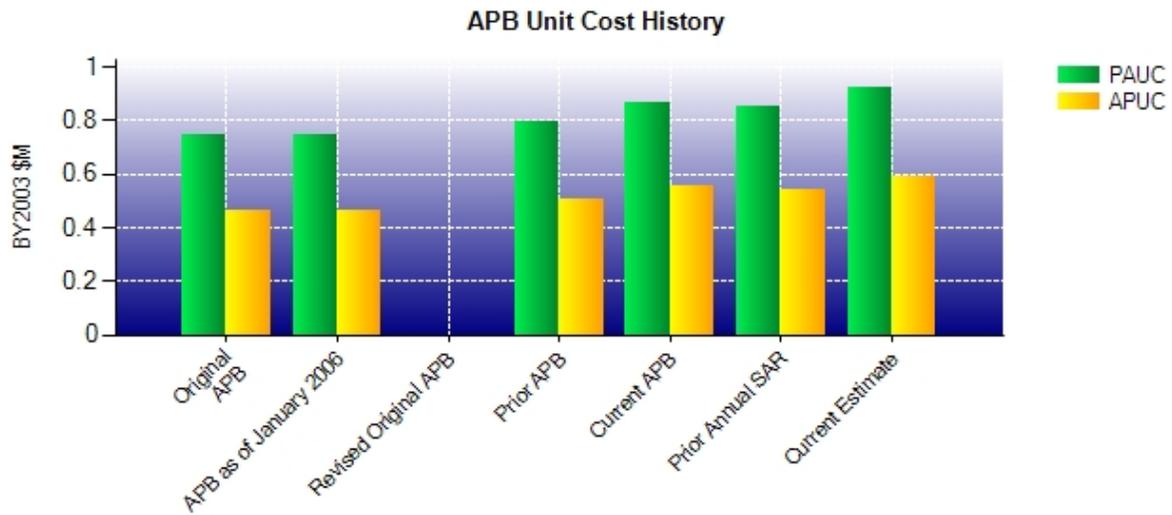
## Nuclear Costs

None

**Unit Cost****Unit Cost Report**

	<b>BY2003 \$M</b>	<b>BY2003 \$M</b>	
<b>Unit Cost</b>	<b>Current UCR Baseline (NOV 2012 APB)</b>	<b>Current Estimate (DEC 2013 SAR)</b>	<b>BY % Change</b>
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost	1661.1	1777.0	
Quantity	1919	1919	
Unit Cost	0.866	0.926	+6.93
<b>Average Procurement Unit Cost (APUC)</b>			
Cost	1040.8	1111.5	
Quantity	1879	1879	
Unit Cost	0.554	0.592	+6.86
	<b>BY2003 \$M</b>	<b>BY2003 \$M</b>	
<b>Unit Cost</b>	<b>Original UCR Baseline (JUL 2003 APB)</b>	<b>Current Estimate (DEC 2013 SAR)</b>	<b>BY % Change</b>
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost	1339.8	1777.0	
Quantity	1790	1919	
Unit Cost	0.748	0.926	+23.80
<b>Average Procurement Unit Cost (APUC)</b>			
Cost	806.5	1111.5	
Quantity	1750	1879	
Unit Cost	0.461	0.592	+28.42

### Unit Cost History



	Date	BY2003 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
<b>Original APB</b>	JUL 2003	0.748	0.461	0.844	0.556
<b>APB as of January 2006</b>	JUL 2003	0.748	0.461	0.844	0.556
<b>Revised Original APB</b>	N/A	N/A	N/A	N/A	N/A
<b>Prior APB</b>	NOV 2011	0.797	0.505	0.970	0.671
<b>Current APB</b>	NOV 2012	0.866	0.554	1.056	0.733
<b>Prior Annual SAR</b>	DEC 2012	0.855	0.543	1.049	0.726
<b>Current Estimate</b>	DEC 2013	0.926	0.592	1.143	0.791

### SAR Unit Cost History

#### Initial SAR Baseline to Current SAR Baseline (TY \$M)

Initial PAUC Dev Est	Changes								PAUC Prod Est
	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 Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.970	-0.009	0.000	0.060	0.041	0.108	0.000	-0.027	0.173	1.143

**Initial SAR Baseline to Current SAR Baseline (TY \$M)**

Initial APUC Dev Est	Changes								APUC Prod Est
	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 Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.671	-0.010	0.000	0.061	0.000	0.095	0.000	-0.027	0.119	0.791

**SAR Baseline History**

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	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	2192.9
Total Quantity	N/A	1790	1919	1919
Prog. Acq. Unit Cost (PAUC)	N/A	0.844	0.970	1.143

**Cost Variance**

<b>Summary Then Year \$M</b>				
	<b>RDT&amp;E</b>	<b>Proc</b>	<b>MILCON</b>	<b>Total</b>
SAR Baseline (Prod Est)	600.3	1261.1	--	1861.4
Previous Changes				
Economic	+0.6	-7.0	--	-6.4
Quantity	--	--	--	--
Schedule	--	+36.6	--	+36.6
Engineering	+29.6	--	--	+29.6
Estimating	+18.1	+125.1	--	+143.2
Other	--	--	--	--
Support	--	-51.4	--	-51.4
Subtotal	+48.3	+103.3	--	+151.6
Current Changes				
Economic	--	-10.9	--	-10.9
Quantity	--	--	--	--
Schedule	--	+78.3	--	+78.3
Engineering	+49.9	--	--	+49.9
Estimating	+8.9	+53.9	--	+62.8
Other	--	--	--	--
Support	--	-0.2	--	-0.2
Subtotal	+58.8	+121.1	--	+179.9
Total Changes	+107.1	+224.4	--	+331.5
CE - Cost Variance	707.4	1485.5	--	2192.9
CE - Cost & Funding	707.4	1485.5	--	2192.9

<b>Summary Base Year 2003 \$M</b>				
	<b>RDT&amp;E</b>	<b>Proc</b>	<b>MILCON</b>	<b>Total</b>
SAR Baseline (Prod Est)	578.9	949.6	--	1528.5
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+19.1	--	+19.1
Engineering	+25.1	--	--	+25.1
Estimating	+16.2	+88.9	--	+105.1
Other	--	--	--	--
Support	--	-37.0	--	-37.0
<b>Subtotal</b>	<b>+41.3</b>	<b>+71.0</b>	<b>--</b>	<b>+112.3</b>
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+48.3	--	+48.3
Engineering	+39.1	--	--	+39.1
Estimating	+6.2	+43.0	--	+49.2
Other	--	--	--	--
Support	--	-0.4	--	-0.4
<b>Subtotal</b>	<b>+45.3</b>	<b>+90.9</b>	<b>--</b>	<b>+136.2</b>
<b>Total Changes</b>	<b>+86.6</b>	<b>+161.9</b>	<b>--</b>	<b>+248.5</b>
CE - Cost Variance	665.5	1111.5	--	1777.0
CE - Cost & Funding	665.5	1111.5	--	1777.0

Previous Estimate: December 2012

<b>RDT&amp;E</b>	<b>\$M</b>	
<b>Current Change Explanations</b>	<b>Base Year</b>	<b>Then Year</b>
Increase reflects Block 1 engineering efforts not previously reported as part of the AGM-88E AARGM program of record. (Engineering)	+39.1	+49.9
Revised prior year funding due to additional flight hours and test events required to support Block 1 Follow On Test & Evaluation. (Estimating)	+6.8	+9.7
Revised estimate due to sequestration reduction in FY 2013. (Estimating)	-0.6	-0.8
<b>RDT&amp;E Subtotal</b>	<b>+45.3</b>	<b>+58.8</b>

<b>Procurement</b>	<b>\$M</b>	
<b>Current Change Explanations</b>	<b>Base Year</b>	<b>Then Year</b>
Revised escalation indices. (Economic)	N/A	-10.9
Stretch-out of procurement buy profile in FY 2013 - FY 2020 as a result of budgetary impacts. (Schedule)	0.0	+10.0
Additional schedule variance due to FY 2012 - FY 2013 reprogramming action. (Schedule)	+8.0	+10.0
Additional schedule variance due to a shift in the procurement buy profile in FY 2015 - FY 2019 as a result of budgetary adjustments. (Schedule)	+40.3	+58.3
Revised estimate due to sequestration reduction in FY 2013. (Estimating)	-5.9	-7.3
Revised estimate to reflect Congressional reduction in FY 2014. (Estimating)	-13.9	-17.8
Revised estimate to reflect actuals. (Estimating)	+0.3	+0.4
Revised estimate to flyaway costs for FY 2015 - FY 2020. (Estimating)	+53.2	+66.5
Revised estimate due to Italian Cooperative restructure of quantities. (Estimating)	+6.7	+9.5
Adjustment for current and prior escalation. (Estimating)	+2.6	+2.6
Adjustment for current and prior escalation. (Support)	-0.3	+0.3
Decrease in Other Support as a result of FY 2013 Sequestration. (Support)	-0.1	-0.3
Decrease in Initial Spares. (Support)	0.0	-0.2
<b>Procurement Subtotal</b>	<b>+90.9</b>	<b>+121.1</b>

## Contracts

### Appropriation: Procurement

Contract Name	<b>AARGM FRP 1</b>
Contractor	Alliant TechSystems (ATK)
Contractor Location	21301 Burbank Blvd, Ste. 100 Woodland Hills, CA 91367
Contract Number, Type	N00019-12-C-0113, FFP
Award Date	September 10, 2012
Definitization Date	September 10, 2012

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.

### Contract Comments

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.

**Appropriation: Procurement**

**Contract Name** **AARGM FRP 2**  
**Contractor** Alliant TechSystems (ATK)  
**Contractor Location** 21301 Burbank Blvd, Ste. 100  
 Woodland Hills, CA 91367  
**Contract Number, Type** N00019-13-C-0162, FFP  
**Award Date** September 25, 2013  
**Definitization Date** September 25, 2013

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	102.4	N/A	123	102.4	102.4

**Cost and Schedule Variance Explanations**

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

**Contract Comments**

This is the first time this contract is being reported.

The contract current value of \$102.43M includes \$12.83M of Italian requirements for thirteen All Up Rounds, two Captive Air Training Missiles (CATMs), and contractor production support as well as \$9.34M of Australian FMS requirements for eight CATMs, three control section spares, three guidance section spares, and contractor production support. The quantity reflects United States, Italian, and Australian quantities.

**Deliveries and Expenditures**

<b>Delivered to Date</b>	<b>Plan to Date</b>	<b>Actual to Date</b>	<b>Total Quantity</b>	<b>Percent Delivered</b>
Development	40	40	40	100.00%
Production	116	116	1879	6.17%
<b>Total Program Quantity Delivered</b>	<b>156</b>	<b>156</b>	<b>1919</b>	<b>8.13%</b>

**Expended and Appropriated (TY \$M)**

Total Acquisition Cost	2192.9	Years Appropriated	22
Expended to Date	902.4	Percent Years Appropriated	78.57%
Percent Expended	41.15%	Appropriated to Date	1117.5
Total Funding Years	28	Percent Appropriated	50.96%

The above data is current as of 2/28/2014.

## Operating and Support Cost

### AGM-88E AARGM

#### Assumptions and Ground Rules

##### Cost Estimate Reference:

The date of the O&S estimate is the June 2012 Service Cost Position. All costs were estimated in constant FY 2003 dollars, the base year of the estimate. O&S structure is in accordance with the Office of the Secretary of Defense Cost Assessment and Program Evaluation O&S Cost Estimating Guide (Oct 2007) excluding the reporting of indirect funding elements. The estimate assumes the full benefit of concurrency with the High-Speed Anti-Radiation Missile (HARM).

##### Sustainment Strategy:

The AGM-88E AARGM sustainment approach is leveraged off of the existing 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. 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.

##### 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.

Unitized O&S Costs BY2003 \$M		
Cost Element	AGM-88E AARGM Avg Annual Cost for All Missiles	AGM-88 HARM (Antecedent) Avg Annual Cost for All Missiles
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
<b>Total</b>	<b>5.500</b>	<b>5.100</b>

Unitized Cost Comments:

Weapon Service life is 15 years per AGM-88E AARGM All-Up Round vice 20 years per HARM. The average annual cost is the total Operation & Maintenance, Navy (OM, N) cost divided by the number of years included in the period of performance.

	Total O&S Cost \$M			
	Current Production APB Objective/Threshold		Current Estimate	
	AGM-88E AARGM		AGM-88E AARGM	AGM-88 HARM (Antecedent)
<b>Base Year</b>	142.6	156.9	142.6	101.3
<b>Then Year</b>	215.8	N/A	215.8	123.7

Total O&S Costs Comments:

None

**Disposal Costs:**

Total estimated costs for disposal is \$8.56M (BY 2003) and are not included in the June 2012 Service Cost position.