

UNCLASSIFIED



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-355



Joint Air-to-Ground Missile (JAGM)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

UNCLASSIFIED

Table of Contents

Sensitivity Originator	3
Common Acronyms and Abbreviations for MDAP Programs	4
Program Information	6
Responsible Office	6
References	7
Mission and Description	8
Executive Summary	9
Threshold Breaches	12
Schedule	13
Performance	14
Track to Budget	16
Cost and Funding	17
Low Rate Initial Production	30
Foreign Military Sales	31
Nuclear Costs	31
Unit Cost	32
Cost Variance	35
Contracts	38
Deliveries and Expenditures	39
Operating and Support Cost	40

Sensitivity Originator

No originator info Available at this time.

Common Acronyms and Abbreviations for MDAP Programs

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

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

Program Information

Program Name

Joint Air-to-Ground Missile (JAGM)

DoD Component

Army

Joint Participants

Navy

Responsible Office

COL David Warnick
Joint Attack Munition Systems Project Office
5250 Martin Road
Redstone Arsenal, AL 35898-8000

david.a.warnick2.mil@mail.mil

Phone: 256-876-1141

Fax: 256-876-0865

DSN Phone: 746-1141

DSN Fax:

Date Assigned: July 6, 2016

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated September 29, 2015

Approved APB

Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated August 14, 2017

Mission and Description

The Joint Air-to-Ground Missile (JAGM) program is an Army-led, ACAT IC MDAP with Joint interest with the U.S. Marine Corps and U.S. Navy. The JAGM is the next generation of aviation-launched, fire and forget missiles to replace the HELLFIRE laser and Longbow radar missiles. JAGM will be used by Joint service aircraft for destruction of high value stationary, moving and relocatable land and maritime targets from standoff range in day, night, adverse weather and obscured battlefield conditions.

Executive Summary

Program Highlights Since Last Report

The JAGM requirements are stable and funding is adequate to meet cost, schedule and performance objectives established in the current approved APB. There are no increased risks to the JAGM program since the last SAR.

The JAGM program continues to execute EMD activities including qualifying the All-Up Round (AUR), the production line, integrating JAGM on threshold platforms and completing all prescribed test activities. Since the last report, the program successfully executed multiple flight tests further demonstrating hardware and software design maturity.

On March 30, 2017, the Physical Configuration Audit successfully verified contractor production processes and that the missile configuration was in accordance with the JAGM AUR product baseline documentation. The prime contractor, Lockheed Martin Company, performed several production processes at the Lockheed Martin, Troy, Alabama missile facility.

On May 24, 2017, the JAGM Product Office and Army Contracting Command awarded a Firm-Fixed Price contract for JAGM shipping and storage containers to Precision Metal Industries Incorporated, Pompano Beach, Florida. The contract is valued at \$4.98M, which includes the base award of \$0.80M and two options valued at \$1.85M and \$3.06M. The containers support LRIP missile deliveries starting in 4th Quarter FY 2018.

On October 10, 2017, OSD delegated preparation of the ICE in support of the JAGM Milestone C. In lieu of an OSD CAPE ICE, responsibility for the ICE full lifecycle cost estimate was delegated to the Deputy Assistant Secretary of the Army for Cost and Economics as lead service, supported by Deputy Assistant Secretary of the Navy for Cost and Economics.

As of February 1, 2018, the JAGM program completed 39 of the planned 48 JAGM shots to support the Milestone C decision. Eight JAGM AURs were launched from a ground launch platform and 31 were launched from the Apache platform. The ground launched tests satisfied initial air worthiness requirements and utilized missiles from the Production Qualification Test (PQT) series. The Apache launched tests included Integrated Test and Evaluation events as well as ten shots during a formal Limited User Test conducted by the Army Test and Evaluation Command. Targets included armored personnel carriers, tactical vehicles, structures and exposed personnel. JAGM engagement modes included Active Fire and Forget with Laser Cueing and Target Designate. Point Designate was exercised in Lock-On-Before-Launch and Lock-On-After-Launch conditions across the engagement envelope.

The PQT program continues with test series representing the JAGM lifecycle of natural and electromagnetic environmental effects (E3) environments. Specially configured and instrumented JAGM AURs are undergoing E3 series to verify JAGM operation in the various electromagnetic fields to be encountered during battlefield and naval operations. The natural and induced environment tests include storage, transportation and tactical deployment conditions ranging from temperature, altitude and humidity extremes to vibration and shock associated with handling and aircraft operations.

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

History of Significant Developments Since Program Initiation	
History of Significant Developments Since Program Initiation	
Date	Significant Development Description
October 2014	USD(AT&L) authorized the release of the final request for proposal for the JAGM EMD contract and LRIP options to include LRIP long lead items.
July 2015	Lockheed Martin was awarded the competitive JAGM EMD contract to develop the next generation of aviation-launched missiles to replace the HELLFIRE laser and Longbow radar missiles.
August 2015	The Joint Attack Munition Systems (JAMS) Project Office, with support from the U.S. Army Aviation and Missile Research, Development and Engineering Center and Lockheed Martin, successfully conducted the third JAGM flight test at Eglin Air Force Base, Florida. The missile had a nominal launch and impacted and destroyed the target. The missile executed a Doppler Beam Sharpening trajectory, increasing the probability of hit against a difficult stationary target using the Active Fire and Forget. Among many firsts, this was the first test of JAGM using the Active Fire and Forget engagement mode and the first engagement of an armored vehicle.
January 2016	The JAMS Project Office conducted a successful JAGM System Critical Design Review (CDR)/Initial Production Readiness Review. The JAGM CDR confirmed the system design is stable and is able to meet system performance requirements as evidenced by the detailed design documentation. The CDR also demonstrated the program to be on track to achieve affordability, should cost goals and establish the system's initial product baseline. The OSD post-CDR Assessment Report provided an overall assessment of the review and technical risk.
April 2016	The JAGM PM provided a program update to the Director, Operational Test & Evaluation on April 26, 2016. In accordance with the flexibility provided in the Milestone B Test and Evaluation Master Plan update, the program scheduled a Limited User Test (LUT) in place of the planned Initial Operational Test and Evaluation (IOT&E) to culminate EMD. The LUT placed the program in a position to be well suited for a successful demonstration of the missile's capability. The subsequent IOT&E included the platform software, currently in development, that enabled pilots to easily access full JAGM functionality without the workarounds that were necessary in LUT. The transition from IOT&E to LUT does not impact the missile design, LRIP, production timelines, IOC or any key program event.
August 2016	On August 23, 2016, JROC Memorandum 088-16 approved the Army's request to change the JAGM KPP for In-Flight Reliability to a Key System Attribute in accordance with the Joint Capabilities Integration and Development System manual.
February 2017	On February 2, 2017, the JAMS PM submitted a Program Deviation Report (PDR) to provide notification of a deviation from the September 29, 2015 approved JAGM APB, in accordance with section 2435, title 10, U.S. Code. The current baseline for Milestone C changes from July 2017 (objective) - January 2018 (threshold) to March 2018(objective) - September 2018 (threshold). Production delays are adversely affecting test asset deliveries necessary for the execution of the EMD test program. This schedule delay is not likely to result in a cost breach on this fixed price incentive (firm target) effort. The cumulative effect of multiple delays related to transitioning from the prototype phase to production processes required to meet EMD delivery requirements is the key driver in the delay. Neither technology readiness nor program requirements are contributing factors and the program successfully overcame all issues. Resultant delays to IOC and FRP remain within the current baseline threshold as the program identified low-risk opportunities to mitigate schedule impact beyond EMD. The PDR was approved by the Army Acquisition Executive on May 4, 2017.

March 2017

On March 17, 2017, the JAGM Product Office received the Army Program Delegation Decisions ADM in which the USD(AT&L) delegated to the Secretary of the Army milestone decision authority for JAGM. Accordingly, the designation for JAGM acquisition program is now ACAT IC.

Threshold Breaches

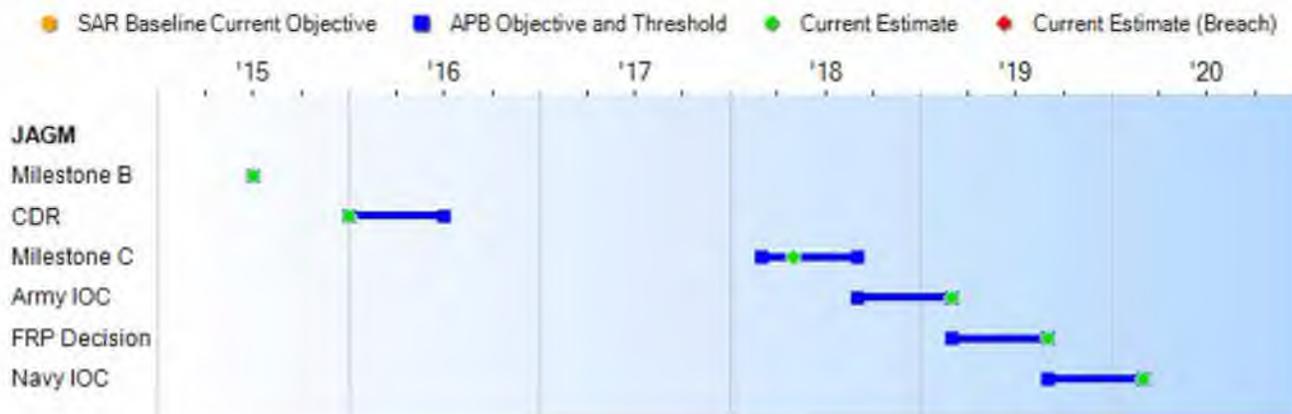
APB Breaches

- Schedule
- Performance
- Cost
 - RDT&E
 - Procurement
 - MILCON
 - Acq O&M
- O&S Cost
- Unit Cost
 - PAUC
 - APUC

Nunn-McCurdy Breaches

- Current UCR Baseline
 - PAUC None
 - APUC None
- Original UCR Baseline
 - PAUC None
 - APUC None

Schedule



Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
Milestone B	Jul 2015	Jul 2015	Jul 2015	Jul 2015
CDR	Jan 2016	Jan 2016	Jul 2016	Jan 2016
Milestone C	Jul 2017	Mar 2018	Sep 2018	May 2018
Army IOC	Sep 2018	Sep 2018	Mar 2019	Mar 2019
FRP Decision	Mar 2019	Mar 2019	Sep 2019	Sep 2019
Navy IOC	Sep 2019	Sep 2019	Mar 2020	Mar 2020

(Ch-1)

Change Explanations

(Ch-1) The FRP Decision Current Estimate changed from August 2019 to September 2019 due to delayed hardware deliveries.

Acronyms and Abbreviations

CDR - Critical Design Review

Performance

Performance Characteristics				
SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Combat Effectiveness/Reliability				
In-Flight Reliability (Post P-BIT Check)				
0.92 (Initial fielding) 0.94 (System Maturity)	0.92 (Initial fielding) 0.94 (System Maturity)	(T=O) 0.92 (Initial fielding) 0.94 (System Maturity)	TBD	T: ≥ 0.85 (Initial fielding) ≥0.92 (System Maturity) O: 0.96
Range				
Minimum Engagement Range Rotary Wing (RW)				
500 m	500 m	(T=O) 500 m	TBD	500 m
Maximum Range (RW)				
Greater Than 8 km	Greater Than 8 km	8 km	TBD	Greater Than 8 km
Interoperability				
Interoperable with joint rotary and fixed wing (manned and unmanned) aircraft				
AH-64D, AH-1Z	AH-64D, AH-1Z	(T=O) AH-64D, AH-1Z	TBD	AH-64E, AH-1Z
Laser Designation				
Compatible with standard Joint aviation platform laser designation systems, including PRF and PIM codes	Compatible with standard Joint aviation platform laser designation systems, including PRF and PIM codes	(T=O) Compatible with standard Joint aviation platform laser designation systems, including PRF and PIM codes	TBD	Compatible with standard Joint aviation platform laser designation systems, including PRF and PIM codes
Carrier/Shipboard Operability				
Compatible with carrier/shipboard operations without degrading other Naval operations				
Yes	Yes	(T=O) Yes	TBD	Yes
Sustainability (Materiel Availability)				
Percentage of missiles operationally capable of performing an assigned mission at a given time, based on materiel condition				
0.90 (At initial fielding) 0.95 (At system maturity)	0.90 (At initial fielding) 0.95 (At system maturity)	(T=O) 0.90 (At initial fielding) 0.95 (At system maturity)	TBD	0.90 (At initial fielding) 0.95 (At system maturity)

(Ch-1)

(Ch-2)

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

Requirements Reference

JAGM CDD version 2.5, dated October 1, 2012 and approved January 17, 2013

Change Explanations

(Ch-1) On August 23, 2016, JROC Memorandum 088-16 approved the Army's request to change the JAGM KPP for In-Flight Reliability to a KSA. Additionally, the In-Flight Reliability threshold and objective values were reduced to 0.85 at initial fielding and 0.92 at system maturity (threshold) (0.96 objective).

(Ch-2) The Current Estimate for Platform Interoperability KPP reflects CDD version 2.6 change from AH-64D to AH-64E.

Notes

The JAGM Life Cycle Sustainment Plan defines system maturity as IOC plus two years.

The JAGM requirements reference is updated to CDD version 2.6, dated October 20, 2015. The CDD update includes adjustment of the In-Flight Reliability KPP to a KSA and modification of the reliability values. The CDD updates the integration platforms from AH-64D to AH-64E and removes all models of OH-58.

Acronyms and Abbreviations

km - kilometer

KSA - Key System Attribute

m - meter

O - Objective

P-BIT - Power-On Built In Test

PIM - Pulse Interval Modulation

PRF - Pulse Repetition Frequency

T - Threshold

Track to Budget

RDT&E

Appn	BA	PE	
Navy	1319	05	0605450M
	Project	Name	
	2211	Joint Air-to-Ground Missile	
Navy	1319	05	0605450N
	Project	Name	
	2211	Joint Air-to-Ground Missile (JAGM)	
Army	2040	05	0605450A
	Project	Name	
	JA6	Joint Air-to-Ground Missile (JAGM)	

Procurement

Appn	BA	PE	
Navy	1507	02	0206138M
	Line Item	Name	
	2248	Joint Air-to-Ground Missile (JAGM)	
Army	2032	02	0311100A
	Line Item	Name	
	C70302	Joint Air-to-Ground Missile (JAGM)	

Acq O&M

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

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2015 \$M			BY 2015 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	978.5	978.5	1076.4	1000.7	952.8	952.8	977.1
Procurement	4691.4	4691.4	5160.5	4736.8	6371.7	6371.7	6070.2
Flyaway	--	--	--	4462.3	--	--	5697.7
Recurring	--	--	--	4450.5	--	--	5683.9
Non Recurring	--	--	--	11.8	--	--	13.8
Support	--	--	--	274.5	--	--	372.5
Other Support	--	--	--	274.5	--	--	372.5
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	62.9	0.0	0.0	78.3
Total	5669.9	5669.9	N/A	5800.4	7324.5	7324.5	7125.6

Current APB Cost Estimate Reference

Director of CAPE (DCAPE) ICE dated July 17, 2015

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.

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

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	118	118	118
Procurement	26319	26319	26319
Total	26437	26437	26437

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	902.6	50.1	18.6	3.2	2.2	0.2	0.2	0.0	977.1
Procurement	148.6	182.2	300.6	317.7	351.4	355.5	490.3	3923.9	6070.2
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	4.9	6.4	7.3	7.4	7.6	44.7	78.3
PB 2019 Total	1051.2	232.3	324.1	327.3	360.9	363.1	498.1	3968.6	7125.6
PB 2018 Total	1059.3	232.3	296.4	239.4	345.0	238.1	271.3	4457.9	7139.7
Delta	-8.1	0.0	27.7	87.9	15.9	125.0	226.8	-489.3	-14.1

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	118	0	0	0	0	0	0	0	0	118
Production	0	469	824	1121	1183	1512	1568	2204	17438	26319
PB 2019 Total	118	469	824	1121	1183	1512	1568	2204	17438	26437
PB 2018 Total	118	420	824	1031	875	1472	1030	1210	19457	26437
Delta	0	49	0	90	308	40	538	994	-2019	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
2040 RDT&E Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2008	--	--	--	--	--	--	51.7
2009	--	--	--	--	--	--	114.8
2010	--	--	--	--	--	--	118.5
2011	--	--	--	--	--	--	66.4
2012	--	--	--	--	--	--	86.8
2013	--	--	--	--	--	--	11.6
2014	--	--	--	--	--	--	15.7
2015	--	--	--	--	--	--	80.6
2016	--	--	--	--	--	--	79.9
2017	--	--	--	--	--	--	47.4
2018	--	--	--	--	--	--	34.6
2019	--	--	--	--	--	--	11.8
2020	--	--	--	--	--	--	3.0
2021	--	--	--	--	--	--	2.0
Subtotal	74	--	--	--	--	--	724.8

Annual Funding 2040 RDT&E Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	BY 2015 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2008	--	--	--	--	--	--	56.5
2009	--	--	--	--	--	--	123.8
2010	--	--	--	--	--	--	125.9
2011	--	--	--	--	--	--	69.2
2012	--	--	--	--	--	--	89.0
2013	--	--	--	--	--	--	11.7
2014	--	--	--	--	--	--	15.5
2015	--	--	--	--	--	--	78.5
2016	--	--	--	--	--	--	77.1
2017	--	--	--	--	--	--	45.0
2018	--	--	--	--	--	--	32.4
2019	--	--	--	--	--	--	10.9
2020	--	--	--	--	--	--	2.7
2021	--	--	--	--	--	--	1.8
Subtotal	74	--	--	--	--	--	740.0

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
2008	--	--	--	--	--	--	11.6
2009	--	--	--	--	--	--	52.8
2010	--	--	--	--	--	--	61.1
2011	--	--	--	--	--	--	48.6
2012	--	--	--	--	--	--	2.6
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	4.7
2015	--	--	--	--	--	--	6.1
2016	--	--	--	--	--	--	23.9
2017	--	--	--	--	--	--	17.8
2018	--	--	--	--	--	--	15.5
2019	--	--	--	--	--	--	6.8
2020	--	--	--	--	--	--	0.2
2021	--	--	--	--	--	--	0.2
2022	--	--	--	--	--	--	0.2
2023	--	--	--	--	--	--	0.2
Subtotal	44	--	--	--	--	--	252.3

Annual Funding 1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2015 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2008	--	--	--	--	--	--	12.7
2009	--	--	--	--	--	--	57.1
2010	--	--	--	--	--	--	65.1
2011	--	--	--	--	--	--	50.6
2012	--	--	--	--	--	--	2.7
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	4.7
2015	--	--	--	--	--	--	6.0
2016	--	--	--	--	--	--	23.2
2017	--	--	--	--	--	--	17.0
2018	--	--	--	--	--	--	14.5
2019	--	--	--	--	--	--	6.3
2020	--	--	--	--	--	--	0.2
2021	--	--	--	--	--	--	0.2
2022	--	--	--	--	--	--	0.2
2023	--	--	--	--	--	--	0.2
Subtotal	44	--	--	--	--	--	260.7

Annual Funding 2032 Procurement Missile Procurement, Army							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	--	27.7	--	--	27.7	--	27.7
2017	373	97.9	--	1.1	99.0	--	99.0
2018	824	174.5	--	0.2	174.7	3.7	178.4
2019	1046	265.4	--	4.6	270.0	6.5	276.5
2020	1108	288.6	--	--	288.6	5.0	293.6
2021	1320	292.1	--	4.8	296.9	5.1	302.0
2022	1376	301.2	--	--	301.2	3.9	305.1
2023	1900	410.5	--	--	410.5	3.6	414.1
2024	1000	210.3	--	--	210.3	3.7	214.0
2025	1000	210.7	--	--	210.7	3.7	214.4
2026	1000	209.9	--	0.8	210.7	3.8	214.5
2027	1000	209.8	--	--	209.8	3.8	213.6
2028	1000	209.5	--	--	209.5	3.9	213.4
2029	1000	208.3	--	--	208.3	3.9	212.2
2030	1000	206.1	--	--	206.1	4.0	210.1
2031	1000	204.4	--	0.9	205.3	4.1	209.4
2032	1000	203.5	--	--	203.5	4.1	207.6
2033	1000	204.1	--	--	204.1	0.7	204.8
2034	1000	204.3	--	--	204.3	0.7	205.0
2035	1000	204.5	--	1.0	205.5	0.7	206.2
2036	356	85.3	--	0.4	85.7	0.7	86.4
2037	--	9.3	--	--	9.3	--	9.3
Subtotal	20303	4437.9	--	13.8	4451.7	65.6	4517.3

Annual Funding 2032 Procurement Missile Procurement, Army							
Fiscal Year	Quantity	BY 2015 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	--	26.5	--	--	26.5	--	26.5
2017	373	92.1	--	1.1	93.2	--	93.2
2018	824	161.3	--	0.2	161.5	3.4	164.9
2019	1046	240.6	--	4.2	244.8	5.9	250.7
2020	1108	256.5	--	--	256.5	4.5	261.0
2021	1320	254.6	--	4.2	258.8	4.4	263.2
2022	1376	257.4	--	--	257.4	3.3	260.7
2023	1900	343.9	--	--	343.9	3.0	346.9
2024	1000	172.7	--	--	172.7	3.0	175.7
2025	1000	169.6	--	--	169.6	3.0	172.6
2026	1000	165.7	--	0.6	166.3	3.0	169.3
2027	1000	162.4	--	--	162.4	2.9	165.3
2028	1000	158.9	--	--	158.9	3.0	161.9
2029	1000	154.9	--	--	154.9	2.9	157.8
2030	1000	150.3	--	--	150.3	2.9	153.2
2031	1000	146.1	--	0.6	146.7	3.0	149.7
2032	1000	142.6	--	--	142.6	2.9	145.5
2033	1000	140.3	--	--	140.3	0.4	140.7
2034	1000	137.6	--	--	137.6	0.5	138.1
2035	1000	135.1	--	0.6	135.7	0.5	136.2
2036	356	55.2	--	0.3	55.5	0.4	55.9
2037	--	5.9	--	--	5.9	--	5.9
Subtotal	20303	3530.2	--	11.8	3542.0	52.9	3594.9

The source for the Procurement quantity buy profile is the JAGM OSD CAPE ICE.

Cost Quantity Information 2032 Procurement Missile Procurement, Army		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 2015 \$M
2016	--	--
2017	373	118.6
2018	824	161.3
2019	1046	240.6
2020	1108	256.5
2021	1320	254.6
2022	1376	257.4
2023	1900	343.9
2024	1000	172.7
2025	1000	169.6
2026	1000	165.7
2027	1000	162.4
2028	1000	158.9
2029	1000	154.9
2030	1000	150.3
2031	1000	146.1
2032	1000	142.6
2033	1000	140.3
2034	1000	137.6
2035	1000	135.1
2036	356	61.1
2037	--	--
Subtotal	20303	3530.2

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	
2017	96	18.8	0.2	--	19.0	2.9	21.9	
2018	--	--	--	--	--	3.8	3.8	
2019	75	16.1	--	--	16.1	8.0	24.1	
2020	75	16.0	--	--	16.0	8.1	24.1	
2021	192	41.1	--	--	41.1	8.3	49.4	
2022	192	41.9	--	--	41.9	8.5	50.4	
2023	304	67.7	--	--	67.7	8.5	76.2	
2024	330	65.1	--	--	65.1	9.8	74.9	
2025	330	65.4	--	--	65.4	10.4	75.8	
2026	330	65.7	--	--	65.7	11.0	76.7	
2027	330	66.0	--	--	66.0	11.7	77.7	
2028	330	66.4	--	--	66.4	12.4	78.8	
2029	330	66.7	--	--	66.7	13.1	79.8	
2030	330	67.0	--	--	67.0	13.9	80.9	
2031	330	67.4	--	--	67.4	14.7	82.1	
2032	330	67.7	--	--	67.7	15.6	83.3	
2033	330	68.1	--	--	68.1	16.5	84.6	
2034	330	68.4	--	--	68.4	17.5	85.9	
2035	330	68.8	--	--	68.8	18.5	87.3	
2036	330	69.1	--	--	69.1	19.6	88.7	
2037	330	69.5	--	--	69.5	20.7	90.2	
2038	330	69.8	--	--	69.8	22.0	91.8	
2039	132	33.1	--	--	33.1	23.3	56.4	
2040	--	--	--	--	--	8.1	8.1	
Subtotal	6016	1245.8	0.2	--	1246.0	306.9	1552.9	

Annual Funding 1507 Procurement Weapons Procurement, Navy								
Fiscal Year	Quantity	BY 2015 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2017	96	17.7	0.2	--	17.9	2.7	20.6	
2018	--	--	--	--	--	3.5	3.5	
2019	75	14.6	--	--	14.6	7.3	21.9	
2020	75	14.2	--	--	14.2	7.2	21.4	
2021	192	35.9	--	--	35.9	7.2	43.1	
2022	192	35.8	--	--	35.8	7.3	43.1	
2023	304	56.8	--	--	56.8	7.1	63.9	
2024	330	53.5	--	--	53.5	8.1	61.6	
2025	330	52.7	--	--	52.7	8.4	61.1	
2026	330	51.9	--	--	51.9	8.7	60.6	
2027	330	51.1	--	--	51.1	9.1	60.2	
2028	330	50.4	--	--	50.4	9.5	59.9	
2029	330	49.7	--	--	49.7	9.7	59.4	
2030	330	48.9	--	--	48.9	10.2	59.1	
2031	330	48.2	--	--	48.2	10.6	58.8	
2032	330	47.5	--	--	47.5	11.0	58.5	
2033	330	46.9	--	--	46.9	11.3	58.2	
2034	330	46.1	--	--	46.1	11.8	57.9	
2035	330	45.5	--	--	45.5	12.2	57.7	
2036	330	44.8	--	--	44.8	12.7	57.5	
2037	330	44.2	--	--	44.2	13.1	57.3	
2038	330	43.5	--	--	43.5	13.7	57.2	
2039	132	20.2	--	--	20.2	14.3	34.5	
2040	--	--	--	--	--	4.9	4.9	
Subtotal	6016	920.1	0.2	--	920.3	221.6	1141.9	

Annual Funding 2020 Acq O&M Operation and Maintenance, Army		
Fiscal Year	TY \$M	
	Total Program	
2019		4.9
2020		6.4
2021		7.3
2022		7.4
2023		7.6
2024		3.2
2025		3.2
2026		3.3
2027		3.3
2028		3.3
2029		3.1
2030		3.2
2031		3.2
2032		3.3
2033		3.4
2034		3.4
2035		3.5
2036		3.6
2037		1.7
Subtotal		78.3

Annual Funding 2020 Acq O&M Operation and Maintenance, Army	
Fiscal Year	BY 2015 \$M
	Total Program
2019	4.5
2020	5.8
2021	6.5
2022	6.4
2023	6.5
2024	2.7
2025	2.6
2026	2.7
2027	2.6
2028	2.6
2029	2.3
2030	2.4
2031	2.3
2032	2.4
2033	2.4
2034	2.3
2035	2.4
2036	2.4
2037	1.1
Subtotal	62.9

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	7/29/2015	7/29/2015
Approved Quantity	2631	2631
Reference	JAGM Milestone B ADM	JAGM Milestone B ADM
Start Year	2017	2017
End Year	2018	2019

Current Total LRIP Start Year (2017) through End Year (2019) tracks to the FY 2019 PB funding and quantities. Since the previous SAR, the LRIP End Year changed from FY 2018 through FY 2019 with the addition of two LRIP options. LRIP 2b and LRIP 3 are planned and funded, but not on contract. The purpose of LRIP 2b and LRIP 3 is to mitigate a production gap between LRIP and FRP. Production contracts allow the Navy and other services to procure JAGM missiles on Army production contracts to maximize economies of scale. LRIP will produce the minimum quantity necessary to provide production articles to establish an initial production base for the system and to permit an orderly increase in the production rate for the system sufficient to transition to FRP.

Foreign Military Sales

None

Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2015 \$M	BY 2015 \$M	% Change
	Current UCR Baseline (Aug 2017 APB)	Current Estimate (Dec 2017 SAR)	

Program Acquisition Unit Cost

Cost	5669.9	5800.4	
Quantity	26437	26437	
Unit Cost	0.214	0.219	+2.34

Average Procurement Unit Cost

Cost	4691.4	4736.8	
Quantity	26319	26319	
Unit Cost	0.178	0.180	+1.12

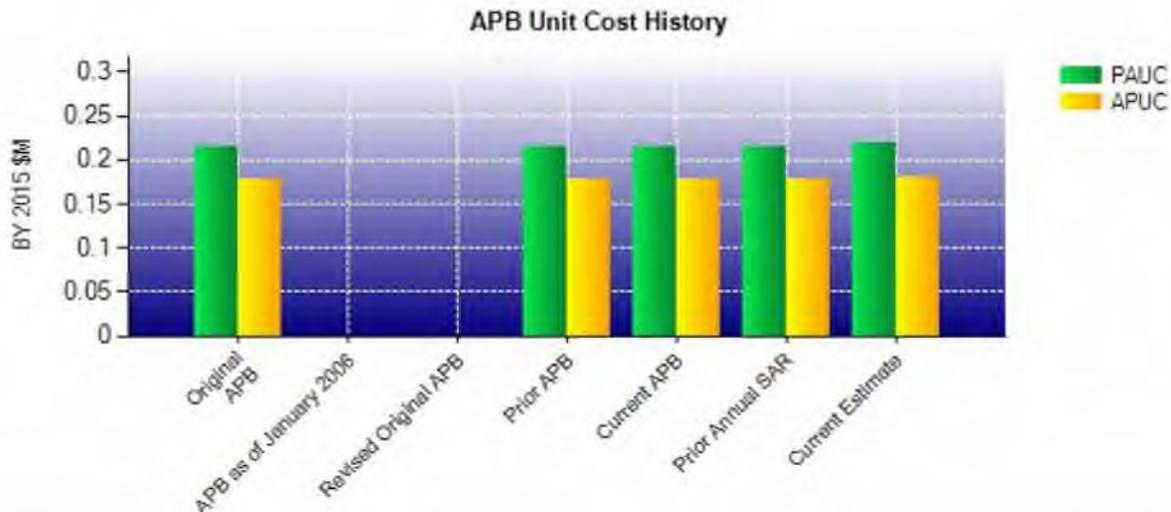
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2015 \$M	BY 2015 \$M	% Change
	Original UCR Baseline (Sep 2015 APB)	Current Estimate (Dec 2017 SAR)	

Program Acquisition Unit Cost

Cost	5669.9	5800.4	
Quantity	26437	26437	
Unit Cost	0.214	0.219	+2.34

Average Procurement Unit Cost

Cost	4691.4	4736.8	
Quantity	26319	26319	
Unit Cost	0.178	0.180	+1.12



APB Unit Cost History					
Item	Date	BY 2015 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Sep 2015	0.214	0.178	0.277	0.242
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Sep 2015	0.214	0.178	0.277	0.242
Current APB	Aug 2017	0.214	0.178	0.277	0.242
Prior Annual SAR	Dec 2016	0.214	0.177	0.270	0.234
Current Estimate	Dec 2017	0.219	0.180	0.270	0.231

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.277	-0.003	0.000	-0.010	0.000	-0.005	0.000	0.011	-0.007	0.270

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.242	-0.003	0.000	-0.011	0.000	-0.009	0.000	0.011	-0.012	0.231

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	Jul 2015	N/A	Jul 2015
Milestone C	N/A	Jul 2017	N/A	May 2018
IOC	N/A	Sep 2018	N/A	Mar 2019
Total Cost (TY \$M)	N/A	7324.5	N/A	7125.6
Total Quantity	N/A	26437	N/A	26437
PAUC	N/A	0.277	N/A	0.270

Cost Variance

Summary TY \$M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Development Estimate)	952.8	6371.7	--	--	7324.5
Previous Changes					
Economic	+0.7	-19.2	--	--	-18.5
Quantity	--	--	--	--	--
Schedule	--	-152.7	--	--	-152.7
Engineering	--	--	--	--	--
Estimating	+27.8	-347.1	--	--	-319.3
Other	--	--	--	--	--
Support	--	+305.7	--	--	+305.7
Subtotal	+28.5	-213.3	--	--	-184.8
Current Changes					
Economic	-1.2	-53.6	--	--	-54.8
Quantity	--	--	--	--	--
Schedule	--	-129.7	--	--	-129.7
Engineering	--	--	--	--	--
Estimating	-3.0	+98.8	--	+78.3	+174.1
Other	--	--	--	--	--
Support	--	-3.7	--	--	-3.7
Subtotal	-4.2	-88.2	--	+78.3	-14.1
Total Changes	+24.3	-301.5	--	+78.3	-198.9
CE - Cost Variance	977.1	6070.2	--	78.3	7125.6
CE - Cost & Funding	977.1	6070.2	--	78.3	7125.6

Summary BY 2015 \$M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Development Estimate)	978.5	4691.4	--	--	5669.9
Previous Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	-13.0	--	--	-13.0
Engineering	--	--	--	--	--
Estimating	+24.9	-240.5	--	--	-215.6
Other	--	--	--	--	--
Support	--	+221.8	--	--	+221.8
Subtotal	+24.9	-31.7	--	--	-6.8
Current Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	--	--	--	--	--
Estimating	-2.7	+80.1	--	+62.9	+140.3
Other	--	--	--	--	--
Support	--	-3.0	--	--	-3.0
Subtotal	-2.7	+77.1	--	+62.9	+137.3
Total Changes	+22.2	+45.4	--	+62.9	+130.5
CE - Cost Variance	1000.7	4736.8	--	62.9	5800.4
CE - Cost & Funding	1000.7	4736.8	--	62.9	5800.4

Previous Estimate: December 2016

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-1.2
Adjustment for current and prior escalation. (Estimating)	+0.9	+0.9
Revised estimate to reflect actuals and minor program reductions (Army). (Estimating)	-1.7	-1.8
Revised estimate to reflect actuals and minor program reductions (Navy). (Estimating)	-1.9	-2.1
RDT&E Subtotal	-2.7	-4.2

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-53.6
Acceleration of procurement buy profile from FY 2019 to FY 2024 (Army). (Schedule)	0.0	-116.9
Acceleration of procurement buy profile, minor increases in FY2019 (Navy). (Schedule)	0.0	-12.8
Revised estimate to reflect increase in tooling and test equipment to support acceleration of missile procurements (Army). (Estimating)	+120.6	+147.3
Revised estimate to reflect increase in tooling and test equipment to support acceleration of missile procurements (Navy). (Estimating)	+19.0	+27.3
Adjustment for current and prior escalation. (Estimating)	+2.2	+2.5
Revised estimate to reflect the Army's realignment of direct civilian pay costs from RDT&E and Procurement investment accounts to O&M to provide additional transparency and auditability. (Estimating)	-61.7	-78.3
Adjustment for current and prior escalation. (Support)	+0.2	0.0
Decrease in Other Support due to shortened procurement schedule (Army). (Support)	-0.1	-0.6
Decrease in Other Support due to shortened procurement schedule (Navy). (Support)	-2.8	-2.8
Decrease in Initial Spares due to minor change in procurement quantity profile (Navy). (Support)	-0.3	-0.3
Procurement Subtotal	+77.1	-88.2

Acq O&M	\$M	
Current Change Explanations	Base Year	Then Year
Revised estimate to reflect the Army's realignment of direct civilian pay costs from RDT&E and Procurement investment accounts to O&M to provide additional transparency and auditability. (Estimating)	+62.9	+78.3
Acq O&M Subtotal	+62.9	+78.3

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: EMD and LRIP and Deployment
Contractor: Lockheed Martin Corporation
Contractor Location: 5600 W Sand Lake Rd MP-265
 Orlando, FL 32819
Contract Number: W31P4Q-15-C-0102
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: July 31, 2015
Definitization Date: July 31, 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
195.2	201.3	1155	197.1	203.2	1155	197.1	197.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the Deputy Assistant Secretary of the Army for Cost and Economics requirement that the program office request additional Cost and Software Data Reporting requirements as well as a Navy change order.

Cost and Schedule Variance Explanations

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

General Contract Variance Explanation

Cost and Schedule Variance are not reported for this contract, because an EVM waiver was granted by the DAE on October 17, 2014 due to the short two-year length of the contract.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	82	82	118	69.49%
Production	0	0	26319	0.00%
Total Program Quantity Delivered	82	82	26437	0.31%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	7125.6	Years Appropriated	11
Expended to Date	1051.2	Percent Years Appropriated	33.33%
Percent Expended	14.75%	Appropriated to Date	1283.5
Total Funding Years	33	Percent Appropriated	18.01%

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

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	May 17, 2017
Source of Estimate:	POE
Quantity to Sustain:	26319
Unit of Measure:	Missile
Service Life per Unit:	25.00 Years
Fiscal Years in Service:	FY 2018 - FY 2065

The 118 developmental missiles will not be sustained.

Sustainment Strategy

Sustainment Approach

- Current: Three years Initial Interim Contractor Support
- Future: Integrated Product Support based sustainment beginning 2nd Quarter FY 2022
- Obtain data rights to enable organic depot/partnering as required
- High Materiel Availability through design
- Leverage existing sustainment infrastructure

Antecedent Information

No Antecedent

Cost Element	Annual O&S Costs BY2015 \$K	
	JAGM Average Annual Cost Per Missile	No Antecedent (Antecedent) N/A
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	0.169	--
Sustaining Support	0.335	--
Continuing System Improvements	0.084	--
Indirect Support	--	--
Other	--	--
Total	0.588	--

Item	Total O&S Cost \$M			
	JAGM		Current Estimate	No Antecedent (Antecedent)
	Current Development APB Objective/Threshold			
Base Year	396.5	436.2	386.8	N/A
Then Year	678.1	N/A	680.9	N/A

Disposal Cost is included in the Operating and Support Cost of the current APB objective and threshold for this program.

Equation to Translate Annual Cost to Total Cost

Total Missile O&S = \$588.00 (Average Annual O&S Cost per Missile) x 25 (Years of Service Life) x 26,319 (Total Missile Quantity) = \$386.8M

O&S Cost Variance		
Category	BY 2015 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2016 SAR	387.0	
Programmatic/Planning Factors	-0.2	Change in procurement buy profile.
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	-0.2	
Current Estimate	386.8	

Disposal Estimate Details

Date of Estimate: May 17, 2017
Source of Estimate: POE
Disposal/Demilitarization Total Cost (BY 2015 \$M): Total costs for disposal of all Missile are 2.5