



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-260



Guided Multiple Launch Rocket System/Guided Multiple Launch Rocket System Alternative Warhead (GMLRS/GMLRS AW)

As of FY 2017 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs	3
Program Information	5
Responsible Office	5
References	5
Mission and Description	6
Executive Summary	7
Threshold Breaches	8
Schedule	9
Performance	11
Track to Budget	13
Cost and Funding	14
Low Rate Initial Production	20
Foreign Military Sales	21
Nuclear Costs	22
Unit Cost	23
Cost Variance	27
Contracts	30
Deliveries and Expenditures	36
Operating and Support Cost	37

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

Guided Multiple Launch Rocket System/Guided Multiple Launch Rocket System Alternative Warhead (GMLRS/GMLRS AW)

DoD Component

Army

Responsible Office

COL James Mills
Presion Fires Rocket and Missile Systems Project Office
5250 Martin Road
Redstone Arsenal, AL 35898-8000

Phone: 256-876-1195

Fax: 256-955-7958

DSN Phone: 746-1195

DSN Fax:

Date Assigned: July 17, 2015

james.c.mills18.mil@mail.mil

References

SAR Baseline (Production Estimate)

Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated May 30, 2003

Approved APB

Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated May 20, 2015

Mission and Description

The mission of the Guided Multiple Launch Rocket System/Guided Multiple Launch Rocket System Alternative Warhead (GMLRS/GMLRS AW) is to attack/neutralize/suppress/destroy targets using indirect precision fires. GMLRS provides Field Artillery units with medium- and long-range (70+ kilometers (Km)) fires while supporting brigade, division, corps, army, theater, Joint/Coalition Forces, and Marine Air-Ground Task Forces in full, limited, or expeditionary operations. GMLRS rocket is a solid propellant artillery rocket deployed from the M270A1 and the High Mobility Artillery Rocket System mobile launch vehicles. GMLRS/GMLRS AW uses an Inertial Measuring Unit with Global Positioning System assistance to guide the rocket to a specific point to deliver effects on target. GMLRS/GMLRS AW is transported and fired in a Rocket Pod Container that consists of six rockets. GMLRS family of munitions consists of three increments: Dual-Purpose Improved Conventional Munition (DPICM), Unitary (U), and Alternative Warhead (AW).

GMLRS DPICM (Increment 1)

The GMLRS DPICM (Increment 1) has a range of 70+ Km, contains 404 DPICM, and is used to provide precision fires on area targets including personnel and thinly armored vehicles. The GMLRS DPICM was an international cooperative development program with five nations (United States, United Kingdom, France, Germany, and Italy).

GMLRS-U (Increment 2)

The GMLRS-U (Increment 2) is equipped with a 200-pound Unitary high explosive warhead, has a range of 70+ Km, and is effective against multiple targets. The single warhead also limits collateral damage to areas surrounding the designated target.

GMLRS AW (Increment 3)

The GMLRS AW (Increment 3) is currently designed to replace the DPICM, provide similar effects at comparable range, and eliminate the probability of Unexploded Ordnance (UXO). The GMLRS AW will satisfy the UXO requirements as defined in the June 19, 2008 Department of Defense Policy on Cluster Munitions and Unintended Harm to Civilians.

Executive Summary

GMLRS Unitary

The Precision Fires Rocket and Missile Systems Project Office executed a GMLRS Unitary Reliability Scoring Conference on July 15, 2015 and assessed the continuous reliability of the GMLRS Unitary at 0.94 (149 Flight Successes of 158 Attempts).

United Arab Emirates (UAE) signed a Letter of Offer and Acceptance (LOA) in March 2015 for 65 GMLRS Unitary Rocket Pods.

GMLRS AW

The Physical Configuration Audit for the GMLRS AW was completed at the system level in March 2015.

Director of Operational Test and Evaluation Assessment recommended the Army revise the Tactics, Techniques, and Procedures (TTP) large area targets for GMLRS AW. Test and Evaluation Command revised the TTP, and the Project Office conducted two successful fire missions in May 2015. The lethality was significantly improved.

The GMLRS AW program successfully completed the combined Milestone C and FRP Decision Review on April 8, 2015. The GMLRS AW Cost Position was approved on April 15, 2015. The ADM to enter into the Production and Deployment Phase and begin FRP and the revised APB were approved by the Army Acquisition Executive on May 20, 2015.

GMLRS FRP X Contract was awarded on June 4, 2015, as an Unfinitized Contract Action change order in the Not to Exceed (NTE) amount of \$226.9M. The NTE was awarded for GMLRS AW plus Low Cost Reduced Range Practice Rocket requirements and depot spares for the Army, U.S. Marine Corps, Bahrain, and UAE.

The annual Army Configuration Steering Board was completed on September 15, 2015; the board recommended no descoping actions.

GMLRS AW completed Initial Operational Test and Evaluation with an assessed reliability of 0.97 (29 Flight Success of 30 attempts). GMLRS AW test program achieved an overall reliability of 0.99 (98 Flight Success of 99 Attempts). The JROC was briefed in September 2015. This completes the GMLRS AW test phase.

Jordan signed a LOA on January 14, 2016 for 24 GMLRS AW rocket pods. Finland signed a LOA on February 20, 2016 for 25 GMLRS AW and 15 GMLRS Unitary rocket pods.

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

Threshold Breaches

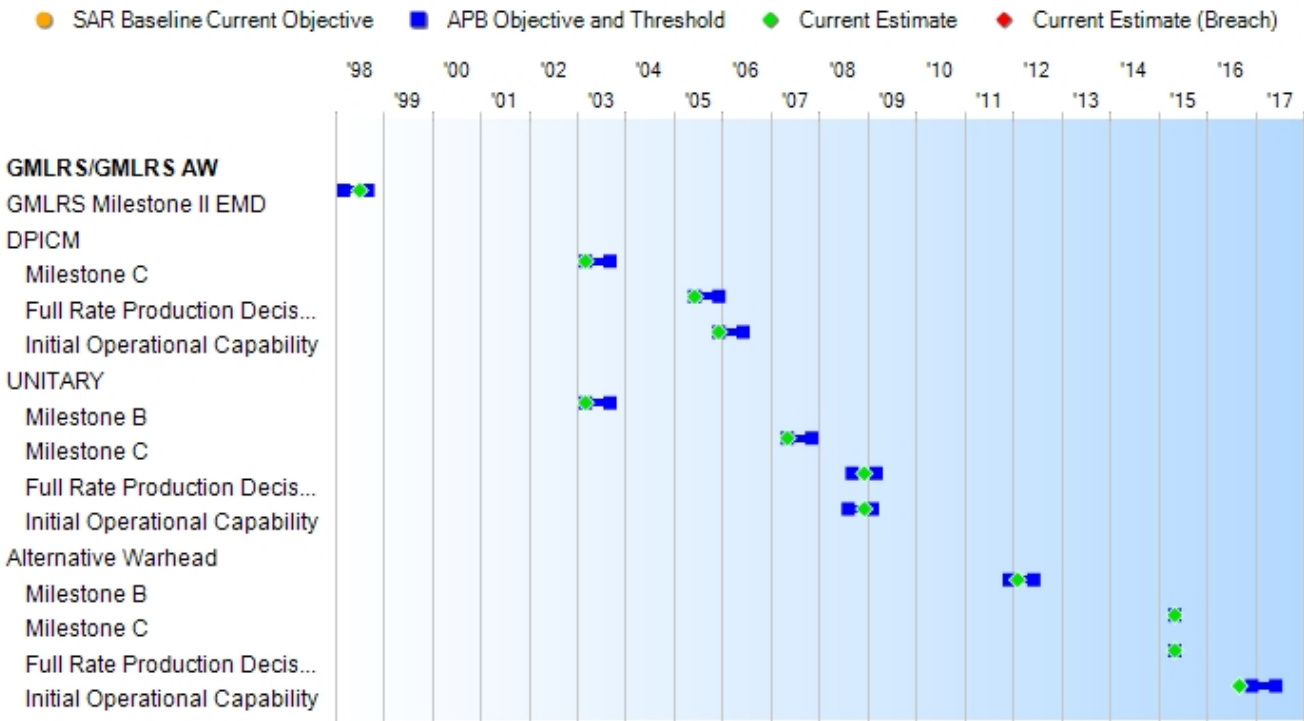
APB Breaches

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
GMLRS Milestone II EMD	Mar 1998	Mar 1998	Sep 1998	Jul 1998
DPICM				
Milestone C	Mar 2003	Mar 2003	Sep 2003	Mar 2003
Full Rate Production Decision	Mar 2005	Jun 2005	Dec 2005	Jun 2005
Initial Operational Capability	Nov 2006	Dec 2005	Jun 2006	Dec 2005
UNITARY				
Milestone B	Mar 2003	Mar 2003	Sep 2003	Mar 2003
Milestone C	Sep 2006	May 2007	Nov 2007	May 2007
Full Rate Production Decision	Sep 2008	Sep 2008	Mar 2009	Dec 2008
Initial Operational Capability	Mar 2008	Aug 2008	Feb 2009	Dec 2008
Alternative Warhead				
Milestone B	N/A	Dec 2011	Jun 2012	Feb 2012
Milestone C	N/A	May 2015	May 2015	May 2015
Full Rate Production Decision	N/A	May 2015	May 2015	May 2015
Initial Operational Capability	N/A	Dec 2016	Jun 2017	Sep 2016

Change Explanations

(Ch-1) The Current Estimate for GMLRS AW Milestone C and FRP Decision changed from April 2015 to May 2015 to reflect the approved GMLRS AW ADM dated May 20, 2015 to enter into the Production and Deployment Phase and begin FRP.

(Ch-2) The Current Estimate for GMLRS AW IOC was changed from June 2016 to September 2016 to combine the GMLRS production contract award with a substantial FMS buy. The synergy of this contract action results in unit cost benefits, increasing U.S. Army rocket quantities by 40% for the same total budget. This allows the Army to achieve IOC with required quantities three months prior to the objective IOC date.

Acronyms and Abbreviations

DPICM - Dual Purpose Improved Conventional Munition

Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
DPICM				
Range				
Max (Km)				
70	70	60	73	70
Min (Km)				
10	10	15	15	10
Effectiveness				
(Expected Fractional Damage [EFD])				
30%	30%	30%	30%	30%
Reliability				
.95	.95	.92	.88	.92
Hazardous Dud Rate				
0	0%	2%/4%	1.71%/3.75%	1.71%/3.75%
UNITARY				
Range				
Max (Km)				
70	70	60	70	70
Min (Km)				
10	10	15	15	15
Effectiveness				
30%	30%	Functional Kill	Meets Threshold	30%
Reliability				
.95	.95	.92	.94	.92
Alternative Warhead				
Range				
Max (Km)				
N/A	70	60	70	70
Min (Km)				
N/A	10	15	15	15
Effectiveness				
N/A	30%	Functional Kill	Meets Threshold	Meets Threshold

(Ch-1)

(Ch-1)

Reliability				
N/A	.95	.92	.99	.99
Hazardous Dud Rate				
N/A	0%	<1%	0%	0%

Requirements Reference

ORD dated November 14, 2003 (includes Dual Purpose Improved Conventional Munitions), Multiple Launch Rocket System Guided Unitary Rocket ORD dated May 16, 2007 (in lieu of CPD), and GMLRS System Alternative Warhead Increment III CDD dated November 8, 2011

Change Explanations

(Ch-1) The Current Estimate for GMLRS AW Effectiveness changed from 30% to Meets Threshold due to demonstrated results achieved during EMD.

Notes

The GMLRS DPICM Demonstrated Performance in Reliability is 0.88. The GMLRS Reliability Working Group conducted a GMLRS DPICM Reliability Scoring Conference on August 18, 2014. The GMLRS DPICM Reliability was assessed at 0.88 (120 Flight Successes of 137 Attempts).

The GMLRS Unitary Demonstrated Performance in Reliability is 0.94. The GMLRS Reliability Working Group conducted a GMLRS Unitary Reliability Scoring Conference on July 15, 2015. The GMLRS Unitary Reliability was assessed at 0.94 (149 Flight Successes of 158 Attempts).

The GMLRS AW PQT Phase I Reliability was assessed at 1.0 (17 Flight Successes of 17 Attempts). The program completed PQT Phase II - Developmental Test/Operational Test Ground, flight phase and the assessed reliability is 1.0 (15 Flight Successes of 15 Attempts), the GMLRS AW Production Verification Test flight phase and the assessed reliability is 1.0 (six Flight Successes of six Attempts). The program has completed the Initial Operational Test and Evaluation with an assessed reliability of 0.97 (29 Flight Successes of 30 Attempts). GMLRS AW test program achieved an overall reliability of 0.99 (74 flight successes of 75 attempts). This completes the GMLRS AW test phase.

Acronyms and Abbreviations

DPICM - Dual Purpose Improved Conventional Munitions
 Max (Km) - Maximum Kilometers
 Min (Km) - Minimum Kilometers
 PQT - Production Qualification Test

Track to Budget

RDT&E

Appn		BA	PE		
Army	2040	07	0205778A		
	Project		Name		
	EG2		GMLRS AW	(Sunk)	
	EG3		GMLRS	(Shared)	
Army	2040	07	0603778A		
	Project		Name		
	784		GMLRS	(Sunk)	
	78G		GMLRS AW	(Sunk)	

Procurement

Appn		BA	PE
Army	2032	07	0210602A
	Line Item		Name
	C65404		GMLRS (Army)
	C65406		GMLRS (Army)

Notes

Line Item C64400 is the parent line for Line Items C65404 and C65406.

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	485.4	826.7	909.4	844.8	500.5	957.1	979.4
Procurement	9294.8	4367.1	4803.8	4435.5	11348.4	5796.3	5854.6
Flyaway	--	--	--	4404.7	--	--	5818.8
Recurring	--	--	--	4244.9	--	--	5604.3
Non Recurring	--	--	--	159.8	--	--	214.5
Support	--	--	--	30.8	--	--	35.8
Other Support	--	--	--	28.6	--	--	33.0
Initial Spares	--	--	--	2.2	--	--	2.8
MILCON	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
Total	9780.2	5193.8	N/A	5280.3	11848.9	6753.4	6834.0

Current APB Cost Estimate Reference

GMLRS Alternative Warhead (AW) Army Cost Position dated April 14, 2015

Confidence Level

Confidence Level of cost estimate for current APB: 50%

The confidence level used in establishing the cost estimate for GMLRS/GMLRS AW is 50% based on standard Department of the Army costing policy.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	235	376	376
Procurement	140004	43560	43560
Total	140239	43936	43936

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2017 President's Budget / December 2015 SAR (TY\$ M)									
Appropriation	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
RDT&E	778.1	36.7	22.0	30.2	29.7	28.0	27.0	27.7	979.4
Procurement	2745.7	251.0	248.1	260.7	205.4	287.3	266.0	1590.4	5854.6
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 2017 Total	3523.8	287.7	270.1	290.9	235.1	315.3	293.0	1618.1	6834.0
PB 2016 Total	3525.5	268.5	183.2	200.5	234.4	256.6	387.3	1961.3	7017.3
Delta	-1.7	19.2	86.9	90.4	0.7	58.7	-94.3	-343.2	-183.3

Quantity Summary										
FY 2017 President's Budget / December 2015 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Development	376	0	0	0	0	0	0	0	0	376
Production	0	22458	1866	1766	1836	1296	1998	1776	10564	43560
PB 2017 Total	376	22458	1866	1766	1836	1296	1998	1776	10564	43936
PB 2016 Total	376	22338	1746	888	1002	1278	1470	2622	12216	43936
Delta	0	120	120	878	834	18	528	-846	-1652	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
1998	--	--	--	--	--	--	13.6
1999	--	--	--	--	--	--	17.7
2000	--	--	--	--	--	--	26.8
2001	--	--	--	--	--	--	16.8
2002	--	--	--	--	--	--	45.6
2003	--	--	--	--	--	--	59.4
2004	--	--	--	--	--	--	54.4
2005	--	--	--	--	--	--	90.0
2006	--	--	--	--	--	--	98.3
2007	--	--	--	--	--	--	43.2
2008	--	--	--	--	--	--	33.5
2009	--	--	--	--	--	--	46.3
2010	--	--	--	--	--	--	18.4
2011	--	--	--	--	--	--	12.2
2012	--	--	--	--	--	--	43.3
2013	--	--	--	--	--	--	61.2
2014	--	--	--	--	--	--	53.7
2015	--	--	--	--	--	--	43.7
2016	--	--	--	--	--	--	36.7
2017	--	--	--	--	--	--	22.0
2018	--	--	--	--	--	--	30.2
2019	--	--	--	--	--	--	29.7
2020	--	--	--	--	--	--	28.0
2021	--	--	--	--	--	--	27.0
2022	--	--	--	--	--	--	27.7
Subtotal	376	--	--	--	--	--	979.4

Annual Funding 2040 RDT&E Research, Development, Test, and Evaluation, Army								
Fiscal Year	Quantity	BY 2003 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
1998	--	--	--	--	--	--	--	14.3
1999	--	--	--	--	--	--	--	18.4
2000	--	--	--	--	--	--	--	27.4
2001	--	--	--	--	--	--	--	17.0
2002	--	--	--	--	--	--	--	45.6
2003	--	--	--	--	--	--	--	58.3
2004	--	--	--	--	--	--	--	52.1
2005	--	--	--	--	--	--	--	83.8
2006	--	--	--	--	--	--	--	89.0
2007	--	--	--	--	--	--	--	38.2
2008	--	--	--	--	--	--	--	29.1
2009	--	--	--	--	--	--	--	39.7
2010	--	--	--	--	--	--	--	15.5
2011	--	--	--	--	--	--	--	10.1
2012	--	--	--	--	--	--	--	35.3
2013	--	--	--	--	--	--	--	49.1
2014	--	--	--	--	--	--	--	42.2
2015	--	--	--	--	--	--	--	33.8
2016	--	--	--	--	--	--	--	28.1
2017	--	--	--	--	--	--	--	16.5
2018	--	--	--	--	--	--	--	22.3
2019	--	--	--	--	--	--	--	21.5
2020	--	--	--	--	--	--	--	19.8
2021	--	--	--	--	--	--	--	18.8
2022	--	--	--	--	--	--	--	18.9
Subtotal	376	--	--	--	--	--	--	844.8

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
2003	822	110.4	--	13.1	123.5	6.6	130.1
2004	683	97.2	--	7.0	104.2	4.8	109.0
2005	954	96.9	--	3.7	100.6	11.3	111.9
2006	984	119.8	--	0.3	120.1	1.5	121.6
2007	925	123.4	--	0.9	124.3	0.7	125.0
2008	2070	241.8	--	20.8	262.6	1.1	263.7
2009	2646	298.7	--	10.1	308.8	0.4	309.2
2010	3228	343.7	--	--	343.7	0.4	344.1
2011	2442	264.1	--	--	264.1	0.4	264.5
2012	2940	332.8	--	--	332.8	0.4	333.2
2013	1824	232.9	--	--	232.9	0.4	233.3
2014	2166	269.6	--	3.0	272.6	0.4	273.0
2015	774	120.0	--	6.7	126.7	0.4	127.1
2016	1866	232.8	--	16.2	249.0	2.0	251.0
2017	1766	239.8	--	7.8	247.6	0.5	248.1
2018	1836	251.7	--	8.5	260.2	0.5	260.7
2019	1296	194.9	--	10.0	204.9	0.5	205.4
2020	1998	275.6	--	11.2	286.8	0.5	287.3
2021	1776	248.8	--	16.7	265.5	0.5	266.0
2022	1794	254.1	--	17.8	271.9	0.5	272.4
2023	2646	357.6	--	17.3	374.9	0.5	375.4
2024	2568	356.3	--	17.3	373.6	0.5	374.1
2025	1986	296.9	--	14.6	311.5	0.5	312.0
2026	1570	240.9	--	11.5	252.4	0.5	252.9
2027	--	--	3.6	--	3.6	--	3.6
Subtotal	43560	5600.7	3.6	214.5	5818.8	35.8	5854.6

Annual Funding 2032 Procurement Missile Procurement, Army							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	822	106.1	--	12.6	118.7	6.3	125.0
2004	683	90.9	--	6.6	97.5	4.5	102.0
2005	954	88.2	--	3.4	91.6	10.2	101.8
2006	984	106.7	--	0.3	107.0	1.3	108.3
2007	925	107.8	--	0.8	108.6	0.6	109.2
2008	2070	208.0	--	17.9	225.9	0.9	226.8
2009	2646	253.7	--	8.6	262.3	0.3	262.6
2010	3228	287.0	--	--	287.0	0.3	287.3
2011	2442	216.7	--	--	216.7	0.3	217.0
2012	2940	269.1	--	--	269.1	0.3	269.4
2013	1824	184.3	--	--	184.3	0.3	184.6
2014	2166	211.3	--	2.4	213.7	0.3	214.0
2015	774	92.8	--	5.1	97.9	0.3	98.2
2016	1866	176.6	--	12.3	188.9	1.5	190.4
2017	1766	178.5	--	5.8	184.3	0.4	184.7
2018	1836	183.7	--	6.2	189.9	0.4	190.3
2019	1296	139.5	--	7.1	146.6	0.4	147.0
2020	1998	193.3	--	7.9	201.2	0.4	201.6
2021	1776	171.1	--	11.6	182.7	0.3	183.0
2022	1794	171.3	--	12.1	183.4	0.3	183.7
2023	2646	236.4	--	11.5	247.9	0.3	248.2
2024	2568	230.9	--	11.3	242.2	0.3	242.5
2025	1986	188.7	--	9.2	197.9	0.3	198.2
2026	1570	150.1	--	7.1	157.2	0.3	157.5
2027	--	--	2.2	--	2.2	--	2.2
Subtotal	43560	4242.7	2.2	159.8	4404.7	30.8	4435.5

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	3/24/2003	1/7/2013
Approved Quantity	13998	4445
Reference	Milestone C ADM (DPICM)	Acquisition Strategy (AW)
Start Year	2003	2003
End Year	2005	2015

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the summation of 1,961 GMLRS Dual Purpose Improved Conventional Munition (DPICM) Rockets plus 2,484 GMLRS Unitary Rockets.

The GMLRS DPICM Milestone C ADM, approved on March 24, 2003, authorized LRIP quantity not to exceed 13,998 rockets. This quantity was based on the Army Acquisition Objective of 140,004 rockets. The actual GMLRS DPICM LRIP quantity is 1,961 rockets.

The GMLRS Unitary Milestone C ADM, signed May 2, 2007, authorized the LRIP quantity not to exceed 3,480 rockets based on the total expected procurement quantity of 34,848. The actual GMLRS LRIP quantity is 2,484 rockets.

The GMLRS AW Milestone B ADM was signed on February 19, 2012, and approved an LRIP quantity of 498 rockets. However, the Acquisition Strategy for GMLRS AW, signed on January 7, 2013, states the program will conduct the Initial Operational Test and Evaluation (IOT&E) during the EMD phase and combine Milestone C with the FRP Decision Review. Therefore, no LRIP is needed. Necessary assets will be procured to support IOT&E during EMD.

Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost \$M	Description
Finland	2/10/2016	25	28.7	GMLRS AW rockets. Case ID FI-B-VAP
Finland	2/10/2016	15	17.7	Case ID FI-B-VAQ
Jordan	1/14/2016	24	28.9	GMLRS AW rockets. Case ID JO-B-YAY
United Arab Emirates	3/12/2015	65	83.5	Case ID AE-B-ZVE
Bahrain	6/30/2014	4	5.3	Case ID BA-B-UIW
Singapore	2/28/2014	58	54.8	Case ID SN-B-VFM
Italy	12/5/2012	25	18.6	International Cooperative Program. Agreement Number GIPR004IT
Singapore	3/26/2012	12	10.1	Case ID SN-B-VET
Italy	11/30/2011	11	7.8	International Cooperative Program. Agreement Number GIPR001IT
Japan	5/1/2011	28	22.5	Case ID JA-B-XIJ
Singapore	2/25/2011	14	10.2	Case ID SN-N-VEN
Germany	11/24/2010	2	1.3	International Cooperative Program. Agreement Number GIPR010GE
United Kingdom	2/1/2010	72	48.9	International Cooperative Program. Agreement Number GIPR011UK
Jordan	1/27/2010	72	58.8	Case ID JO-B-WYB
France	12/4/2009	43	33.8	International Cooperative Program. Agreement Number GIPR004FR
Germany	6/1/2009	20	13.6	International Cooperative Program. Agreement Number GIPR009GE
Japan	2/1/2009	30	22.7	Case ID JA-B-XGH
United Kingdom	1/12/2009	50	31.5	International Cooperative Program. Agreement Number GIPR008UK
France	12/18/2008	2	1.4	International Cooperative Program. Agreement Number GIPR002FR
United Kingdom	12/5/2008	168	105.8	International Cooperative Program. Agreement Number GIPR007UK
Germany	10/15/2008	35	24.5	International Cooperative Program. Agreement Number GIPR006GE
United Kingdom	7/25/2008	75	48.5	International Cooperative Program. Agreement Number GIPR003UK
Germany	12/31/2007	13	9.4	International Cooperative Program. Agreement Number GIPR001GE
Singapore	12/5/2007	18	15.0	Case ID SN-B-VDO
United Arab Emirates	8/1/2007	130	98.6	DPICM and Unitary rockets. Case ID AE-B-ZUD
United Kingdom	8/15/2005	109	67.7	International Cooperative Program. Agreement Number GIPR001UK

Notes

All quantities are listed as rocket pods. The rocket pod refers to the Rocket Pod Container that consists of six guided

rockets.

The Multiple Launch Rocket System (MLRS) was cooperatively developed under a Memorandum of Understanding (MOU) partnership between France, Germany, Italy, the United Kingdom (UK), and the U.S. The baseline design for the GMLRS rocket was developed under the terms and conditions of the MLRS MOU.

The baseline design was the M30 GMLRS Dual Purpose Improved Conventional Munition (DPICM) rocket pod. Only the U.S. and the United Arab Emirates (UAE) have procured and continue to maintain stockpiles of M30 GMLRS DPICM pods. Two variants of the M30 GMLRS DPICM pod have since been developed by the U.S. Army, the M31A1 GMLRS Unitary and M30E1 GMLRS AW. The following nations have procured and continue to maintain stockpiles of M31A1 GMLRS Unitary pods: Bahrain, France, Germany, Italy, Japan, Jordan, Singapore, UAE, and UK.

Jordan and Finland will procure and maintain stockpiles of M30E1 GMLRS AW.

Nuclear Costs

None

Unit Cost

Unit Cost Report

Item	BY 2003 \$M	BY 2003 \$M	% Change
	Current UCR Baseline (May 2015 APB)	Current Estimate (Dec 2015 SAR)	
Program Acquisition Unit Cost			
Cost	5193.8	5280.3	
Quantity	43936	43936	
Unit Cost	0.118	0.120	+1.69
Average Procurement Unit Cost			
Cost	4367.1	4435.5	
Quantity	43560	43560	
Unit Cost	0.100	0.102	+2.00

Item	BY 2003 \$M	BY 2003 \$M	% Change
	Revised Original UCR Baseline (Jun 2007 APB)	Current Estimate (Dec 2015 SAR)	
Program Acquisition Unit Cost			
Cost	4578.4	5280.3	
Quantity	43795	43936	
Unit Cost	0.105	0.120	+14.29
Average Procurement Unit Cost			
Cost	3966.7	4435.5	
Quantity	43560	43560	
Unit Cost	0.091	0.102	+12.09

The GMLRS hardware will maintain approximately 80 percent commonality, regardless of which warhead is integrated into the systems. Consequently, changes in cost of any variant will directly affect the APUCs and PAUCs of the others.

The split-out APUC and PAUC of the GMLRS variants are:

GMLRS DPICM APUC (\$0.133M (BY\$ 2003); Quantity (Qty) = 2,472)

GMLRS UNITARY APUC (\$0 .098M (BY\$ 2003); Qty = 22,506)

GMLRS AW APUC (\$0.102M (BY\$ 2003); Qty = 18,582)

GMLRS DPICM PAUC (\$0.189M (BY\$ 2003); Qty = 2,565)

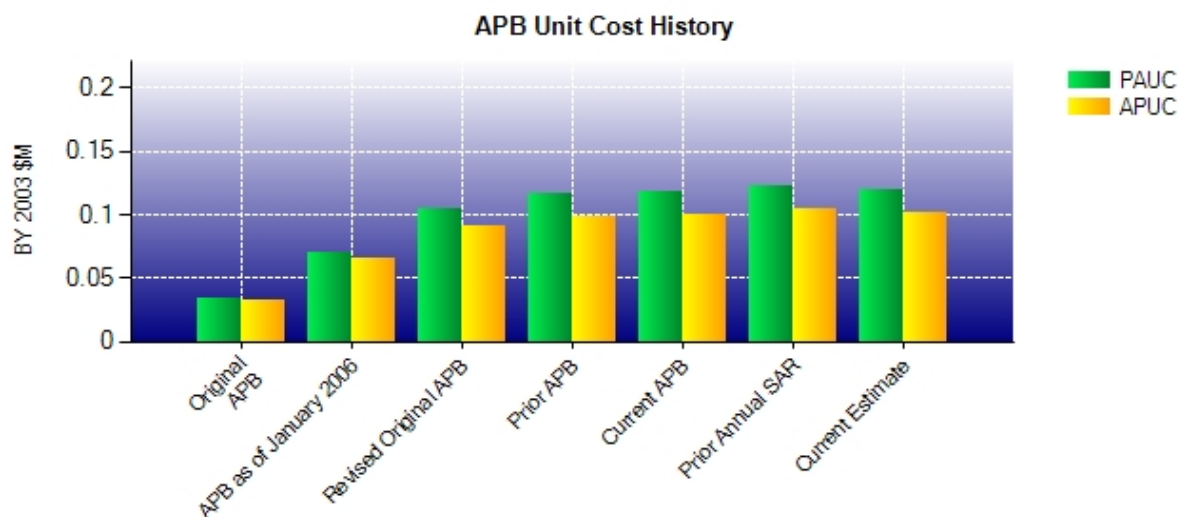
GMLRS UNITARY PAUC (\$0.112M (BY\$ 2003); Qty = 22,684)

GMLRS AW PAUC (\$0.110M (BY\$ 2003); Qty = 18,723)

All GMLRS variants benefit from the RDT&E future system enhancements (insensitive munitions, obsolescence, cost reduction initiatives), therefore an artificial pro-rating would have to be made to include them in the split-out PAUCs above. The split-out PAUCs exclude the funding for these future enhancements; these dollars are included in the composite

PAUC shown in the Unit Cost section.

Unit Cost History



Item	Date	BY 2003 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Mar 1998	0.034	0.032	0.039	0.037
APB as of January 2006	May 2003	0.070	0.066	0.084	0.081
Revised Original APB	Jun 2007	0.105	0.091	0.133	0.119
Prior APB	Feb 2012	0.116	0.099	0.146	0.127
Current APB	May 2015	0.118	0.100	0.154	0.133
Prior Annual SAR	Dec 2014	0.122	0.104	0.160	0.139
Current Estimate	Dec 2015	0.120	0.102	0.156	0.134

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	
0.039	-0.003	0.001	0.001	0.009	0.037	0.000	0.000	0.045	0.084

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.084	0.012	-0.012	0.034	0.000	0.038	0.000	0.000	0.072	0.156

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	
0.037	-0.003	0.004	0.001	0.006	0.036	0.000	0.000	0.044	0.081

Current SAR Baseline to Current Estimate (TY \$M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.081	0.012	-0.025	0.035	0.000	0.031	0.000	0.000	0.053	0.134

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	Mar 1998	Mar 1998	Jul 1998
Milestone C	N/A	Oct 2003	Mar 2003	Mar 2003
IOC	N/A	Apr 2004	Nov 2006	Dec 2005
Total Cost (TY \$M)	N/A	1688.6	11848.9	6834.0
Total Quantity	N/A	43182	140239	43936
PAUC	N/A	0.039	0.084	0.156

The Milestone C and IOC reported above reflect the GMLRS Dual Purpose Improved Conventional Munition variant. Milestone C for the GMLRS Unitary variant was approved May 2007. Milestone C for the GMLRS AW variant was approved May 2015.

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	500.5	11348.4	--	11848.9
Previous Changes				
Economic	+6.6	+545.9	--	+552.5
Quantity	+196.0	-8922.7	--	-8726.7
Schedule	-9.1	+1558.8	--	+1549.7
Engineering	--	+10.8	--	+10.8
Estimating	+263.1	+1507.8	--	+1770.9
Other	--	--	--	--
Support	--	+11.2	--	+11.2
Subtotal	+456.6	-5288.2	--	-4831.6
Current Changes				
Economic	-2.2	-29.2	--	-31.4
Quantity	--	--	--	--
Schedule	--	-38.5	--	-38.5
Engineering	--	--	--	--
Estimating	+24.5	-138.6	--	-114.1
Other	--	--	--	--
Support	--	+0.7	--	+0.7
Subtotal	+22.3	-205.6	--	-183.3
Total Changes	+478.9	-5493.8	--	-5014.9
CE - Cost Variance	979.4	5854.6	--	6834.0
CE - Cost & Funding	979.4	5854.6	--	6834.0

Summary BY 2003 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	485.4	9294.8	--	9780.2
Previous Changes				
Economic	--	--	--	--
Quantity	+159.0	-5929.7	--	-5770.7
Schedule	-5.1	+241.7	--	+236.6
Engineering	--	+8.5	--	+8.5
Estimating	+187.4	+902.3	--	+1089.7
Other	--	--	--	--
Support	--	+9.8	--	+9.8
Subtotal	+341.3	-4767.4	--	-4426.1
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+18.1	-92.2	--	-74.1
Other	--	--	--	--
Support	--	+0.3	--	+0.3
Subtotal	+18.1	-91.9	--	-73.8
Total Changes	+359.4	-4859.3	--	-4499.9
CE - Cost Variance	844.8	4435.5	--	5280.3
CE - Cost & Funding	844.8	4435.5	--	5280.3

Previous Estimate: December 2014

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-2.2
Adjustment for current and prior escalation. (Estimating)	+0.6	+0.8
Contract award delay for Insensitive Munitions (IM) resulted in adjustment to funding. (Estimating)	-5.7	-7.5
Revised funding to adjust for IM activities that were previously delayed. (Estimating)	+23.2	+31.2
RDT&E Subtotal	+18.1	+22.3

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-29.2
Adjustment for current and prior escalation. (Estimating)	+3.9	+4.8
Acceleration of procurement buy profile from FY 2015 to FY 2020 due to funding realignment which has provided resources needed to procure rockets at a more economic rate. (Schedule)	0.0	-38.5
Adjusted funding to align with the Milestone C/FRP APB. (Estimating)	-71.5	-108.3
Due to additional Overseas Contingency Operations funding and quantities in FY 2017, the production schedule will be shortened by one year from FY 2027 to FY 2026, and the total non-end item recurring flyaway costs will be reduced. (Estimating)	-24.6	-35.1
Adjustment for current and prior escalation. (Support)	-0.1	+0.1
Increase in Other Support for additional engineering support costs associated with the second IM vendor. (Support)	+0.6	+1.0
Decrease in Initial Spares due to revised cost estimate. (Support)	-0.2	-0.4
Procurement Subtotal	-91.9	-205.6

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: GMLRS FRP VI
Contractor: Lockheed Martin Missiles and Fire Control - Dallas
Contractor Location: 1701 W Marshall Drive
 Grand Prairie, TX 75051-0000
Contract Number: W31P4Q-11-C-0166
Contract Type: Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)
Award Date: June 10, 2011
Definitization Date: June 10, 2011

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
445.4	N/A	4440	483.7	N/A	4704	483.7	483.7

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to options exercised, change order incorporations, and negotiated reopener clauses.

Cost and Schedule Variance Explanations

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

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because the cost or incentive portion does not meet the threshold requirements for earned value management reporting. The CPFF portion of this contract has a total value of \$9.599M.

Contract Identification

Appropriation: Procurement
Contract Name: GMLRS FRP VII
Contractor: Lockheed Martin Missiles and Fire Control - Dallas
Contractor Location: 1701 W Marshall Drive
 Grand Prairie, TX 75051-0000
Contract Number: W31P4Q-12-C-0151
Contract Type: Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)
Award Date: June 29, 2012
Definitization Date: June 29, 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
353.2	N/A	3306	553.6	N/A	5550	553.6	553.6

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to option exercises, change order incorporations, and negotiated reopener clauses.

Contract Variance			
Item	Cost Variance	Schedule Variance	
Cumulative Variances To Date	0.0	0.0	0.0
Previous Cumulative Variances	0.0	0.0	0.0
Net Change	+0.0	+0.0	+0.0

Cost and Schedule Variance Explanations

None

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because the cost or incentive portion does not meet the threshold requirements for earned value management reporting. The CPFF portion of this contract had a total value of \$13.6M.

Notes

FRP VIII is an option modification to FRP VII, which was awarded December 2012.

Contract Identification

Appropriation: RDT&E
Contract Name: AW EMD
Contractor: Lockheed Martin Missiles and Fire Control - Dallas
Contractor Location: 1701 W Marshal Drive
 Grand Prairie, TX 75051-0000
Contract Number: W31P4Q-12-C-0121
Contract Type: Firm Fixed Price (FFP)
Award Date: March 30, 2012
Definitization Date: March 30, 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
25.0	N/A	N/A	105.9	N/A	N/A	105.9	104.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to option exercises, change order incorporations, and negotiated reopener clauses.

Cost and Schedule Variance Explanations

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

Notes

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: Procurement
Contract Name: GMLRS FRP IX
Contractor: Lockheed Martin Missiles and Fire Control - Dallas
Contractor Location: 1701 W Marshall Drive
Grand Prairie, TX 75051-0000
Contract Number: W31P4Q-14-C-0066
Contract Type: Cost Plus Fixed Fee (CPFF), Fixed Price Incentive(Firm Target) (FPIF)
Award Date: December 20, 2013
Definitization Date: December 01, 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
255.1	N/A	1824	296.5	303.9	2922	296.5	296.5

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to to the increase in quantities, adding Singapore FMS requirements and adding additional scope.

Contract Variance			
Item	Cost Variance	Schedule Variance	
Cumulative Variances To Date	0.0	0.0	0.0
Previous Cumulative Variances	0.0	0.0	0.0
Net Change	+0.0	+0.0	+0.0

Cost and Schedule Variance Explanations

None

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because the cost or incentive portion does not meet the threshold requirements for earned value management reporting. The CPFF portion of this contract has a total value of \$5.2M.

An EVM wavier was signed on February 6, 2015 by the Army Acquisition Executive for FRP IX and FRP X.

Notes

Originally, the GMLRS FRP IX contract was executed on December 20, 2013, as an Undefined Contract Action in the Not to Exceed (NTE) amount of \$255.1M and awarded for GMLRS Unitary plus Low Cost Reduced Range Practice Rocket requirements for the Army, Marine Corps, and Italy. The new NTE includes increased quantities, Singapore requirements and additional scope.

Delays in the definitization of FRP IX contract was due to OSD and Army policy changes, OSD/ Army Peer Reviews, change in contract type from FFP to FPIF, Army Contracting Command personnel shortages, and contractors taking longer to respond to contract changes. Negotiations started in April 2015 and issues with the contractor actuals and sub-contractor's price increased the timeline. Negotiations were settled in October 2015 and definitization was accomplished in December 2015.

Contract Identification

Appropriation: Procurement
Contract Name: GMLRS FRP X
Contractor: Lockheed Martin Missiles and Fire Control - Dallas
Contractor Location: 1701 W Marshall Drive
 Grand Prairie, TX 75051-0000
Contract Number: W31P4Q-15-C-0103
Contract Type: Fixed Price Incentive(Firm Target) (FPIF), Cost Plus Fixed Fee (CPFF)
Award Date: June 04, 2015
Definitization Date:

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
226.9	N/A	924	230.6	N/A	924	230.6	230.6

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the increase in Low Cost Reduced Range Practice Rocket pod quantities for the Army.

Cost and Schedule Variance Explanations

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

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because the cost or incentive portion does not meet the threshold requirements for earned value management reporting. The CPFF portion of this contract has a value of \$7.6M.

An EVM waiver was signed on February 6, 2015 by the Army Acquisition Executive for FRP IX and FRP X.

Notes

This is the first time this contract is being reported.

The contract was executed June 4, 2015, as an Unfinalized Contract Action change order in the Not to Exceed (NTE) amount of \$226.9M. The NTE was awarded for GMLRS AW plus Low Cost Reduced Range Practice Rocket requirements and Depot Spares for the Army, Marine Corps, Bahrain, and United Arab Emirates.

FRP X was originally combined with FRP IX and was de-coupled during OSD Peer Review. Additional delays in definitization were caused by changing contract type from Firm Fixed Price to Fixed Price Incentive Fee, Army Peer Reviews requirements, and Army Contracting Command personnel shortages. Definitization is scheduled for 2016.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	376	376	376	100.00%
Production	21060	21060	43560	48.35%
Total Program Quantity Delivered	21436	21436	43936	48.79%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	6834.0	Years Appropriated	19
Expended to Date	2775.0	Percent Years Appropriated	63.33%
Percent Expended	40.61%	Appropriated to Date	3811.5
Total Funding Years	30	Percent Appropriated	55.77%

The above data is current as of February 26, 2016.

The Expended to Date amount was inadvertently overstated in the 2014 SAR; it is correctly reported above.

Operating and Support Cost

Cost Estimate Details

Date of Estimate: November 06, 2015
Source of Estimate: POE
Quantity to Sustain: 7260
Unit of Measure: Rocket Pod
Service Life per Unit: 10.00 Years
Fiscal Years in Service: FY 2005 - FY 2036

The O&S Costs include all variants (GMLRS Dual Purpose Improved Conventional Munition (DPICM), Unitary, and AW). The rocket pod refers to the Rocket Pod Container that consists of six guided rockets with an expected service life of ten-years and procurement of 7,260 rocket pods (total of 43,560 rockets). The 376 RDT&E rockets are test articles and were consumed.

Sustainment Strategy

The Sustainment Strategy is two-level maintenance - field and sustainment. An organic depot capability was established for GMLRS DPICM and Unitary variants in 2nd Quarter FY 2009. This capability will be upgraded to incorporate GMLRS AW in 3rd Quarter FY 2016.

Antecedent Information

No Antecedent

Annual O&S Costs BY2003 \$K		
Cost Element	GMLRS/GMLRS AW Average Annual Cost Per Rocket Pod	No GMLRS Antecedent (Antecedent)
Unit-Level Manpower	0.024	--
Unit Operations	0.021	--
Maintenance	0.859	--
Sustaining Support	1.943	--
Continuing System Improvements	0.116	--
Indirect Support	0.000	--
Other	0.000	--
Total	2.963	--

The Cost Element Sustaining Support includes Missile Stockpile Reliability Certification, base operations, second destination transportation, System Engineering Program Management, and training. The Continuing System Improvements consists of software maintenance.

Item	Total O&S Cost \$M			
	GMLRS/GMLRS AW			No GMLRS Antecedent (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	204.8	225.3	215.1	N/A
Then Year	337.0	N/A	354.6	N/A

Equation to Translate Annual Cost to Total Cost

Total O&S Cost = Average Annual Cost per Rocket Pod x Number of Rocket Pods x Life per Rocket Pod = \$2.963K x 7260 Rocket Pods x 10 Years = \$215.1M (BY 2003 \$M)

O&S Cost Variance		
Category	BY 2003 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2014 SAR	177.5	
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	37.6	Cost were reallocated based on funding guidance interpretation during the Cost Review Board process regarding the Program Executive Group (PEG) for Stockpile reliability and training devices. (Previously these were costed under the Equipping PEG now moved to the Sustaining PEG).
Total Changes	37.6	
Current Estimate	215.1	

Disposal Estimate Details

Date of Estimate: November 06, 2015
Source of Estimate: POE
Disposal/Demilitarization Total Cost (BY 2003 \$M): Total costs for disposal of all Rocket Pod are 41.3