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Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

GUIDED MULTIPLE LAUNCH ROCKET SYSTEM (GMLRS)

December 2021 Selected Acquisition Report (SAR)



**December 31, 2021
Department of The Army**

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Executive Summary

Program Highlights Since Last Report (Congress):

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

GMLRS FRP XV Contract Award - W31P4Q-18-C-0049, Option 2; FRP XV (Mod P00041) was awarded March 1, 2020 as a modification to the FRP XIII instrument for procurement of 9,546 rockets. This requirement is in support of Army, USMC, Germany, Romania, Singapore, and South Korea.

The Extended Range GMLRS (ERG) Phase 3 contract definitized April 17, 2020 as a Firm Fixed Price Contract for \$150M to complete development and qualification.

GMLRS FY 2021 Production Contract Award - W31P4Q-21-D-0003, was awarded March 26, 2021 as a Firm Fixed Price contract for procurement of 11,136 rockets. This requirement is in support of Army, USMC, Germany, and Romania.

GMLRS Enhanced Alternate Warhead (EAW) Award - W9124P-19-9-0001, was awarded April 29, 2021 as an Other Transaction Agreement (OTA) and Cost Plus Fixed Fee (CPFF) Contract with a \$78.9M budget.

The GMLRS Reliability Working Group conducted a GMLRS Reliability Scoring Conference on May 19, 2021. The GMLRS Unitary Reliability was assessed at 0.94 (193 Flight Success/206 Flight Attempts). This exceeds the Threshold requirement for the GMLRS Unitary Reliability KPP of 0.92; Objective requirement is 0.95. The GMLRS Alternative Warhead (AW) Reliability was assessed at 0.99 (101 Flight Success/102 Flight Attempts). This exceeds the Threshold requirement for the GMLRS AW Reliability KPP of 0.92, as well as the Objective requirement of 0.95.

A successful ERG Engineering Design Test 3 test flight was conducted May 27, 2021 with all objectives met in the end-to-end test event. The ERG System Critical Design Review (CDR) was conducted on June 30, 2021 and all issues closed December 20, 2021.

Project Manager Strategic & Operational Rockets & Missiles (STORM) directed the prime contractor to increase AW maximum capacity to 9,402 warheads for the FY 2021 production contract per guidance from Army Capability Manager and Army G8. Procurement of AW rockets prioritized over Unitary (66,289 AW and 18,413 Unitary) per guidance in Final FY2023/2027 Total Munitions Requirements (TMR) guidance dated August 25, 2021.

Full Materiel Release for GMLRS rockets configured with the Insensitive Munitions Propulsion System was approved on December 22, 2021. There are no significant software-related issues with this program at this time

History of Significant Developments Since Program Initiation

Date	Description
Jun-1998	Milestone II Decision Review was executed in June 1998 approving GMLRS Dual Purpose Improved Conventional Munition (DPICM) entry into EMD.
Sep-1998	A Memorandum of Understanding was finalized in September 1998 with the U.S., United Kingdom, Ireland, Germany, France and Italy, which resulted in a November 1998 EMD contract award for the international development program to produce a common product with sharing and minimizing costs and risks.
Oct-2000	The GMLRS program was restructured in October 2000 due to development problems experienced by the previous guidance set subcontractor
Dec-2001	A special Army Systems Acquisition Review Council (ASARC) was held on December 6, 2001, during which the Acting Army Acquisition Executive (AAE) and the Vice Chief of Staff of the Army reviewed the Nunn-McCurdy Unit Cost breach and initiated Secretary of Defense certification procedures.
Dec-2002	The GMLRS program was redesignated ACAT IC.
Feb-2003	Production Readiness Statement concluded that the GMLRS DPICM program was ready for production. The Chief Information Officer certified that both GMLRS DPICM and GMLRS Unitary met all interoperability requirements.
Mar-2003	A combined ASARC for the GMLRS DPICM and GMLRS Unitary systems was successfully conducted in March 2003. The ASARC approved entry into LRIP for GMLRS DPICM and entry into System Development and Demonstration for GMLRS Unitary. The ADMs were signed on March 24, 2003
May-2003	The GMLRS DPICM Test and Evaluation Master Plan (TEMP) was signed by the Director, Under Secretary of the Army for Operational Requirements in March 2003. The Test and Evaluation Strategy was approved in May 2003.
Nov-2003	A paper JROC was completed on November 14, 2003. The JROC Memorandum was published on November 14, 2003, and accepted the Army's proposed change to the threshold average hazardous dud rate for submunitions. The change amends performance requirements for ranges between 20-60 kilometers (Km) to less than 2 percent with an objective of 0 percent. The threshold average hazardous dud rate must be less than 4 percent with an objective of 0 percent for ranges between 15-20 kilometers (Km) and 60-70 Km.
Mar-2004	The GMLRS Unitary TEMP was approved on March 17, 2004.
Nov-2004	The Initial Operational Testing and Evaluation (IOT&E) was completed on November 10, 2004, and the Army Test and Evaluation Command's Initial Operational Test System Evaluation Report was signed January 26, 2005. All reliability and maintainability requirements in the CDD (formerly ORD) and the performance specification were met or exceeded.
Jun-2005	The GMLRS DPICM IOC was approved by the AAE on June 22, 2005.
Jun-2005	The TEMP, supporting the GMLRS DPICM FRP Decision, was signed by the Director of Operational Test and Evaluation on June 8, 2005

Sep-2005	The first ever combat fire mission was conducted using GMLRS Unitary rockets against enemy positions in Iraq. At a distance of greater than 50 Km, eight rockets were fired, destroying insurgent strongholds and killing enemy insurgents. Collateral damage to adjacent structures was minimal.
Dec-2005	The GMLRS DPICM IOC was achieved on or before the Objective APB schedule date
Sep-2006	Deliveries of GMLRS Urgent Materiel Release (UMR) Unitary rockets began in September 2006 and continue to date. These deliveries are in response to a second request received from U.S. Central Command for additional UMR Unitary rockets to be used in theater.
Jan-2007	Title 10, U.S. Code, requires that munitions be Insensitive Munition (IM) compliant. To approach this objective, the GMLRS program incorporated the development and procurement of an IM Warhead for Unitary and is investigating other IM related improvements. The GMLRS program submitted an IM Plan of Action and Milestones and a request for IM waiver as part of the PEO Missiles and Space IM Strategic Plan. The IM waiver for FY 2007 through FY 2008 was approved by the JROC on January 4, 2007.
Feb-2007	The PEO Missiles and Space submitted a Program Deviation Report (PDR) to the MDA on February 9, 2007, which provided notification that the GMLRS program anticipates a critical Nunn -McCurdy unit cost breach. Consequently, the GMLRS program completed an intense review by a certification team composed of five separate Integrated Product Teams.
Apr-2007	The GMLRS program successfully obtained Nunn-McCurdy Certification on April 26, 2007, when the DAE signed an ADM approving the continuation of the restructured GMLRS program as ACAT IC. The DAE directed GMLRS to restructure the program to "buy-to-budget" additional rocket quantities as can be afforded in each year, FY 2008 through FY 2013. The DAE further instructed the PM to actively pursue the potential for a multi-year procurement strategy beginning with Full Rate Production.
May-2007	The May 2, 2007 GMLRS Unitary Milestone C and LRIP Decision ADM approved the Acquisition Strategy and APB.
Jun-2008	A GMLRS AW Directed Requirement Memorandum signed by the Army Deputy Chief of Staff for Operations, Plans and Training on June 25, 2008, validated the requirement for GMLRS AW.
Dec-2008	GMLRS Unitary FRP Decision was approved on December 23, 2008, and IOC was achieved in December 2008.
Jul-2009	On September 11, 2009, the AAE granted GMLRS approval to enter into the Technology Development at Milestone A.
Nov-2009	On September 11, 2009, the AAE granted GMLRS approval to enter into the Technology Development at Milestone A.
Nov-2009	The GMLRS DPICM program completed its last production on November 5, 2009.
Feb-2010	The GMLRS class Justification & Approval (J&A) was approved on February 18, 2010, for the procurement of continued FRP of the GMLRS Unitary for FY 2010 through FY 2012.
Feb-2011	In the FY 2012 PB, a GMLRS RDT&E funding increase caused a Total RDT&E cost

	breach. The increase funded technological enhancements to the GMLRS Unitary based on emerging requirements currently in the Joint Capabilities Integration Development System process. Future increments of GMLRS will utilize these enhancements to further reduce collateral damage and expand target options for the Warfighter.
Apr-2011	The GMLRS AW Sole Source J&A for the EMD Contract to Lockheed Martin Missiles and Fire Control-Dallas (LMMFC-D) was approved by the AAE on April 29, 2011.
Feb-2012	Milestone B Decision Review was executed on February 19, 2012, approving entry into EMD.
Jul-2013	The GMLRS AW program successfully completed the Critical Design Review at the system level. All Engineering Development Test flight tests were successfully completed (seven rockets fired over three tests), placing the program on track to meet the reliability growth curve.
Mar-2003	A combined ASARC for the GMLRS DPICM and GMLRS Unitary systems was successfully conducted in March 2003. The ASARC approved entry into LRIP for GMLRS DPICM and entry into System Development and Demonstration for GMLRS Unitary. The ADMs were signed on March 24, 2003
Sep-2013	The Precision Fires Rocket and Missile Systems Project Office took delivery of the 20,000th GMLRS Rocket
Sep-2013	Milestone II Decision Review was executed in June 1998 approving GMLRS Dual Purpose Improved Conventional Munition (DPICM) entry into EMD.
Nov-2014	The GMLRS AW program successfully completed all testing for the EMD phase. IOT&E completed in November 2014. The reliability was assessed at 0.97 for IOT&E and an overall reliability of 0.99 for EMD. This exceeds the CDD requirement of 0.95.
Apr-2015	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 Production and Deployment and begin FRP and the revised APB were approved by the AAE on May 20, 2015.
Sep-2015	GMLRS AW completed IOT&E 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.
Sep-2016	The GMLRS AW program successfully completed IOC in November 2016. The IOC quantity of 54 GMLRS AW pods was delivered in September 2016. Type Classification was approved on October 13, 2016. Full Materiel Release was approved on November 7, 2016.
Oct-2016	The Deputy Secretary of Defense directed the Army to conduct a 140-Km range, multi-domain, GMLRS improvement program. The AAE approved and signed the Extended Range (ER) GMLRS modification memorandum on June 26, 2017.
May-2017	The Precision Fires Rocket and Missile Systems Project Office executed a GMLRS Unitary Reliability Scoring Conference on May 25, 2017, and assessed the continuous reliability of the GMLRS Unitary at 0.94 (172 Flight Successes of 182 Attempts).
Jun-2017	The GMLRS/GMLRS AW program experienced breaches in RDT&E costs and PAUC as the result of additional Army funding in FY 2018 through FY 2022 to support modification and testing of the ER GMLRS. A PDR was submitted to the MDA.

Jun-2017	The Army Acquisition Executive approved management of the ER GMLRS as a modification program by memorandum on June 26, 2017.
Jun-2018	The JROC approved an updated GMLRS AW CDD in lieu of CPD which changed the GMLRS Maximum Range (Objective) KPP to 200-Km.
Jun-2018	GMLRS FRP XII contract was definitized the NTE price was increased to include purchase of M31 parts to send to Software Engineering Directorate to build a test bed, and extend Period of Performance to December 31, 2019 for the M31 Iron Bird effort.
Aug-2018	ER GMLRS Modification Phase III development and qualification contract was awarded on March 29, 2019 to complete the system's CDR.
Sep-2018	GMLRS FRP XIII contract was definitized for \$793.2M
Mar-2019	ER GMLRS Modification Phase III development and qualification contract was awarded on March 29, 2019 to complete the system's CDR.
Jul-2019	Missile Supplemental Notice 19-08 Issued July 2019 GMLRS DPICM reclassify to Code N (for emergency combat use only).
Apr-2020	Production of Insensitive Munitions Propulsion System configuration, for the Unitary M31A2 and AW M30A2 rockets.
Apr-2020	GMLRS FRP XV Contract Award - W31P4Q-18-C-0049, Option 2; FRP XV (Mod P00041) was awarded March 1, 2020 as a "work within scope" modification to the FRP XIII instrument for procurement of 9,546 rockets. This requirement is in support of Army, USMC, Germany, Romania, Singapore, and South Korea.
May-2020	Per guidance from Army Capability Manager and Army G8 in the FY22-26 TMR, PM STORM has directed the prime contractor to increase AW maximum capacity to 9,402 warheads for the FY2021 production contract Procurement of AW rockets prioritized over Unitary (66,289 AW and 18,423 Unitary) per guidance in Final FY2022/2026 Total Munitions Requirements (TMR) guidance dated May 29, 2020.
Nov-2020	Production Milestone of 50,000 GMLRS rockets
Mar-2021	GMLRS FY 2021 Production Contract Award - W31P4Q-21-D-0003, was awarded March 26, 2021 as a Firm Fixed Price contract for procurement of 11,136 rockets. This requirement includes the increase of AW warhead tooling to maximize the capacity to 9,402 warheads per guidance from Army Capability Manager and Army G8. Procurement of AW rockets prioritized over Unitary (66,289 AW and 18,413 Unitary) per guidance in Final FY2023/2027 Total Munitions Requirements (TMR) guidance dated August 25, 2021.
Apr-2021	GMLRS Enhanced Alternate Warhead (EAW) Award - W9124P-19-9-0001, was awarded April 29, 2021 as an Other Transaction Agreement (OTA) and Cost Plus Fixed Fee (CPFF) Contract with a \$78.9M budget.
May-2021	Successful ERG Engineering Design Test 3 test flight conducted May 27, 2021, all objectives met in end-to-end test event.
Jun-2021	ER GMLRS System Critical Design Review (CDR) conducted on June 30, 2021.

Schedule

Schedule Events

Events Title (or Header)	Current Objective	Current Threshold	Current Estimate/Actual Date	Deviation?
GMLRS Milestone II EMD	Mar-1998	Sep-1998	Jul-1998	
DPICM				
Milestone C	Mar-2003	Sep-2003	Mar-2003	
Full Rate Production Decision	Jun-2005	Dec-2005	Jun-2005	
Initial Operational Capability	Dec-2005	Jun-2006	Dec-2005	
Unitary				
Milestone B	Mar-2003	Sep-2003	Mar-2003	
Milestone C	May-2007	Nov-2007	May-2007	
Full Rate Production Decision	Sep-2008	Mar-2009	Dec-2008	
Initial Operational Capability	Aug-2008	Feb-2009	Dec-2008	
Alternative Warhead				
Milestone B	Dec-2011	Jun-2012	Feb-2012	
Milestone C	May-2015	May-2015	May-2015	
Full Rate Production Decision	May-2015	May-2015	May-2015	
Initial Operational Capability	Nov-2016	Jun-2017	Nov-2016	

Schedule Notes:	Schedule Deviation Explanations:

Significant Schedule Risks

Event	Date	Description
Current	5/29/2019	MLRS Family of Munitions Common Test Set has a risk with Authority To Operate on the formally qualified ERG FCS SW v1.0 unavailable to support Operational Test Flights. This risk was identified on May 19, 2019 working with the contractor the problem has been resolved and the risk completed on December 17, 2021.

Performance

Performance Attributes					
Current Objective	Current Threshold	Current Estimate	Deviation?	Demonstrated Performance	Date
Attribute Title:	DPICM Max Range			KPP	
70Km	60Km	73Km		73Km	
Attribute Title:	DPICM Min Range			KPP	
10Km	15Km	15Km		15Km	
Attribute Title:	DPICM Effectiveness (Expected Fractional Damage)			KPP	
30%	30%	30%		30%	
Attribute Title:	DPICM Reliability			KPP	
0.95	0.92	0.89		0.89	
Attribute Title:	Unitary Max Range			KPP	
0	2%/4%	1.71%/3.75%		1.71%/3.75%	
Attribute Title:	Unitary Min (Km)			KPP	
10Km	15Km	15Km		15Km	
Attribute Title:	Unitary Effectiveness			KPP	
30%	Functional Kill	30%		30%	
Attribute Title:	Unitary Reliability			KPP	
0.95	0.92	0.94		0.94	

Attribute Title: Alternative Warhead Max Range				KPP	
70Km	60Km	70Km		70Km	
Attribute Title: Alternative Warhead Min Range				KPP	
10Km	15Km	15Km		15Km	
Attribute Title: Alternative Warhead Effectiveness				KPP	
30%	Functional Kill	Meets Threshold		30%	
Attribute Title: Alternative Warhead Reliability				KPP	
0.95	0.92	0.99		0.99	
Attribute Title: Alternative Warhead Hazardous Dud Rate				APA	
0	<1%	0		0	

<i>Performance Notes:</i>	<i>Performance Deviation Explanations:</i>
<p>GMLRS DPICM is NOT coded as a breach since it has been out of production since 2005. The ten-year shelf-life has been extended to 15 years. Remaining GMLRS DPICM rockets have been transferred to Condition Code N (For Emergency Wartime Use Only). COCOM Commanders have been briefed and accept GMLRS DPICM degraded reliability.</p> <p>The GMLRS DPICM Demonstrated Performance in Reliability is 0.89. The GMLRS Reliability Working Group conducted a GMLRS DPICM Reliability Scoring Conference on May 19, 2021. The GMLRS DPICM Reliability was assessed at 0.89 (153 Flight Success / 171 Flight Attempts).</p> <p>The GMLRS Unitary Demonstrated Performance in Reliability is 0.94. The GMLRS Reliability Working Group conducted a GMLRS Unitary Reliability Scoring Conference on May 19, 2021. The GMLRS Unitary Reliability was assessed at 0.94 (193 Flight Success / 206 Flight Attempts).</p> <p>The GMLRS AW Demonstrated Performance in Reliability is 0.99. The GMLRS Reliability Working Group conducted a GMLRS AW Reliability Scoring Conference on May 19, 2021. The GMLRS AW Reliability was assessed at 0.99 (101 Flight Success / 102 Flight Attempts).</p>	

<p>GMLRS AW CDD in lieu of CPD update approved June 27, 2018 (JROCM 068-18), to increase Maximum (Objective) Range KPP from 70Km to 200Km in support of Extended Range GMLRS and includes all variants of the GMLRS Family of Munitions.</p> <p>Acronyms:</p> <p>AW - Alternative Warhead</p> <p>CDD - Capability Development Document CPD - Capability Production Development</p> <p>DPICM - Dual Purpose Improved Conventional Munitions IOT&E - Initial Operational Test and Evaluation</p> <p>KPP - Key Performance Parameter Max (Km) - Maximum Kilometers Min (Km) - Minimum Kilometers</p>	
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Acquisition Budget Estimate

Total Acquisition Cost

Budget Year: 2023 Base Year: 2003

Appropriation Category (\$Millions)	Objective Base Year (Current APB)	Threshold Base Year (Current APB)	Budget Estimate Base Year	Budget Estimate Then Year	Deviation?
RDT&E	\$ 826.70	\$ 909.40	\$ 1,219.7	\$ 1,536.6	Yes
Procurement	\$ 4,367.10	\$ 4,803.80	\$ 9,069.9	\$ 13,048.6	Yes
MILCON	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	
Acq O&M	\$ 0.00	\$ 0.00	\$ 28.7	\$ 45.1	
Total Acquisition	\$ 5,193.80		\$ 10,318.3	\$ 14,630.3	
PAUC	\$ 0.118	\$ 0.130	\$ 0.118	\$ 0.167	
APUC	\$ 0.100	\$ 0.110	\$ 0.104	\$ 0.150	

Total End Item Quantity

Quantity	Current APB	Current Estimate
Development Qty	376	431

Procurement Qty	43,560	87,174
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Budget Notes:

Army Acquisition Executive approved Current APB, May 20, 2015.

Revised POE as a result of collaboration with DASA-CE on reviewing cost in support of the GMLRS Operational Sustainment Review and re-phasing of procurement quantities in accordance with available funding.

PROC - Update System Test and Evaluation Support to reflect extended PROC schedule from FY26 to FY29. Quantity variance resulting from increase of 8,092 rockets from 79,082 to 87,174.

Quantity Notes:

The Deputy Chief of Staff, G-8 rescinded the GMLRS Army Procurement Objective on November 16, 2018 and replaced it with the Army Total Munitions Requirement (TMR). The estimate for Procurement quantity therefore changes annually when the TMR is published. Based on the FY 2027 TMR, the combined GMLRS quantity is changed from 79,082 to 87,174 rockets. The total quantity accounts for prior procurement of 2,472 GMLRS DPICM rockets not captured in the current TMR. RDTE- Revised 376 increase to 431 (55 estimated EAW)- due to increased emerging requirements.

Cost Deviations Explanations:

The GMLRS/GMLRS AW program experienced a deviation to RDT&E cost as the result of additional Army funding to support modification and testing of the ER GMLRS. The GMLRS/GMLRS AW program also experienced deviations to Procurement and O&S as a result of increased quantities. The RDT&E, Procurement, and O&S Cost deviations were previously reported in the December 2019 SAR. A Program Deviation Report dated February 12, 2018 was acknowledged by the Army Acquisition Executive on April 13, 2018. With ER GMLRS past Critical Design Review and Army G-3/5/7 guidance on inclusion of ER GMLRS in the Army Total Munitions Requirements, an Army Integrated Product Team (IPT) has been formed to begin the process of developing a recommendation to the Army Acquisition Executive to revise the APB. The IPT held a kickoff meeting on December 15, 2021. The PMO has started development of a Cost Analysis Requirements Description to support Deputy Assistant Secretary of the Army (Cost & Economics) preparation of an Army Cost Position to serve as the basis for the anticipated revision to the APB.

Risk and Sensitivity Analysis

Current Procurement Risks:

The unit cost is highly sensitive to the final negotiated prices for the new build Mod Pod and ER GMLRS rocket, as well as the final quantity requirements for ER GMLRS and total GMLRS.

Unit Cost

Current Baseline Compared with Current Estimate

Current Baseline Base Year: 2003

Category (\$M)	Current Baseline	Current Estimate	% Change	Breach? Significant or Critical
Program Acquisition Unit Cost				
Acquisition Cost	\$ 5,193.8	\$ 10,318.3		
Program Quantity	43,936	87,605		
PAUC	\$ 0.118	\$ 0.118	-0.36%	None
Average Procurement Unit Cost				
Procurement Cost	\$ 4,367.1	\$ 9,069.9		
Procurement Quantity	43,560	87,174		
APUC	\$ 0.100	\$ 0.104	3.78%	None

Original Baseline Compared with Current Estimate

Original Baseline Base Year: 2003

Category (\$M)	Original Baseline	Current Estimate	% Change	Breach? Significant or Critical
Program Acquisition Unit Cost				
Acquisition Cost	\$ 4,578.40	\$ 10,318.2		
Program Quantity	43,795	87,605		
PAUC	\$ 0.105	\$ 0.118	12.66%	None
Average Procurement Unit Cost				
Procurement Cost	\$ 3,966.70	\$ 9,069.9		
Procurement Quantity	43,560	87,174		
APUC	\$ 0.091	\$ 0.104	14.25%	None
Impacts of Schedule Changes on Unit Cost				

Unit Cost Notes

Contracts

Activity Title	Enhanced Alternative Warhead (EAW)				
Supported Phase	Development	CAGE Code	4CUP1	City	Huntsville
Work Start Date	4/29/2021	CAGE Legal Name	Kord Technologies, Inc.	State/Province	AL
Notes					
Activity Title	Enhanced Guidance Set (EGS)				
Supported Phase	Development	CAGE Code	4CUP1	City	Huntsville
Work Start Date	9/20/2021	CAGE Legal Name	Kord Technologies, Inc.	State/Province	AL
Notes					
Activity Title	Build to Print Pod (B2P)				
Supported Phase	Development	CAGE Code	17996	City	Lincoln
Work Start Date	9/27/2021	CAGE Legal Name	General Dynamics-OTS	State/Province	NE
Notes					

Contracts and Efforts

Contract Number	W31P4Q-18-C-0049	Order Number	Original	Contract Title	GMLRS FRP 13
CAGE Code	S4420	City	GRAND PRAIRIE	Contracting Office	DoD - Department of Defense
CAGE Legal	Lockheed Martin	State/Province	TX	Contract Strategy	Select

Name							
Effort Number							
Supported Phase	Production	Latest Modification Number	78	Definitization Date	4/27/2018		
Contract Type	Fixed-Price Incent	Latest Modification Date	11/24/2021	Work Start Date	4/28/2018		
Technical Data Rights	None	Notes The contract was executed on April 27, 2018, as an undefinitized contract action in the Not-to-Exceed (NTE) amount of \$828.7M for 6,996 tactical rockets. The NTE was awarded for GMLRS AW and Unitary Rockets, and LCRRP Rocket requirements for the Army, U.S. Marine Corps, and Romania. The contract was definitized September 11, 2018, for a quantity of 11,196 tactical and training rockets.					
Contract/Effort Price, Quantity and Performance (\$M)							
Initial Target Price	\$ 828.70	Current Target Price		Contractor's EAC			
Initial Ceiling Price	\$ 828.70	Current Ceiling Price		PM's EAC			
Initial Quantity	11,100	BAC		BCWP		Work Completed	0.00%
Current Quantity	11,226	ACWP		BCWS		Cost Variance	
Delivered Quantity	11,226					Schedule Variance	
Factors Contributing to Cost Variance and Projected Effects on Program Costs:				Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:			
Cost and Schedule Variance are not reported for this contract because an EVM Waiver and Class Deviation was approved by the Army Acquisition Executive (AAE) on December 6, 2015 by the AAE.							

Contract Number	W31P4Q-18-C-0049	Order Number	1	Contract Title	GMLRS FRP 14 Option 1
CAGE Code	S4420	City	GRAND PRAIRIE	Contracting Office	DoD - Department of Defense
CAGE Legal Name	Lockheed Martin	State/Province	TX	Contract Strategy	Select
Effort Number					

Supported Phase	Production	Latest Modification Number	78	Definitization Date	3/27/2019		
Contract Type	Fixed-Price Incent	Latest Modification Date	11/24/2021	Work Start Date	3/27/2019		
Technical Data Rights	None	Notes FRP 14 was awarded as a modification to the FRP 13 instrument which supports requirement of 8430 tactical rockets and 2082 LCRRPR for the Army, remaining rockets in support of USMC, Poland, Romania and Bahrain.					
Contract/Effort Price, Quantity and Performance (\$M)							
Initial Target Price	\$ 1,127.10	Current Target Price		Contractor's EAC			
Initial Ceiling Price	\$ 1,167.10	Current Ceiling Price		PM's EAC			
Initial Quantity	10,032	BAC	\$ 9.81	BCWP	\$ 9.65	Work Completed	98.40%
Current Quantity	11,310	ACWP	\$ 9.23	BCWS	\$ 9.69	Cost Variance	\$ 0.42
Delivered Quantity	11,310					Schedule Variance	-\$ 0.03
Factors Contributing to Cost Variance and Projected Effects on Program Costs:				Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:			
				IMP rocket motor deliveries in July 2021 caused the delay of 588 rockets for FRP 14 issue has been resolved and deliveries resumed in November 2021, return to GREEN schedule has moved FRP 14 deliveries to July 2022.			

Contract Number	W31P4Q-18-C-0049	Order Number	2	Contract Title	GMLRS FRP 15 Option 2
CAGE Code	S4420	City	GRAND PRAIRIE	Contracting Office	DoD - Department of Defense
CAGE Legal Name	Lockheed Martin	State/Province	TX	Contract Strategy	Select
Effort Number					
Supported Phase	Production	Latest Modification Number	78	Definitization Date	2/28/2020

Contract Type	Fixed-Price Incent	Latest Modification Date	11/24/2021	Work Start Date	3/1/2020	
Technical Data Rights		None		Notes		
Contract/Effort Price, Quantity and Performance (\$M)						
Initial Target Price		Current Target Price		Contractor's EAC		
Initial Ceiling Price		Current Ceiling Price		PM's EAC		
Initial Quantity	11,100	BAC	\$ 0.97	BCWP	\$ 0.60	Work Completed 61.76%
Current Quantity	11,226	ACWP	\$ 0.58	BCWS	\$ 0.61	Cost Variance \$ 0.02
Delivered Quantity	1,068					Schedule Variance -\$ 0.01
Factors Contributing to Cost Variance and Projected Effects on Program Costs:				Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:		

Contract Number	W31P4Q-21-D-0003	Order Number	Original	Contract Title	GMLRS FY21 Production
CAGE Code	S4420	City	GRAND PRAIRIE	Contracting Office	DoD - Department of Defense
CAGE Legal Name	Lockheed Martin	State/Province	TX	Contract Strategy	Select
Effort Number					
Supported Phase	Production	Latest Modification Number	7	Definitization Date	
Contract Type	Firm-Fixed-Price	Latest Modification Date	11/2/2021	Work Start Date	3/26/2021
Technical Data Rights	None	Notes FRP 16 is named GMLRS FY21 Production and was awarded as a new contract on March 26, 2021. GMLRS FY21 (FRP 16) is an IDIQ award which supports US Army GMLRS (5,796 rockets) and LCRRPR (2,022 rockets), and GMLRS rockets for USMC (1,176), Romania (324) and Germany (1,818) with procurement of 11,136 total tactical and training rockets. The contract provides a priced production option available for exercise to support the FY22 FRP requirements with multiple quantity points priced for added ordering flexibility.			
Contract/Effort Price, Quantity and Performance (\$M)					

Initial Target Price		Current Target Price		Contractor's EAC			
Initial Ceiling Price		Current Ceiling Price		PM's EAC			
Initial Quantity	11,136	BAC		BCWP		Work Completed	0.00%
Current Quantity	11,136	ACWP		BCWS		Cost Variance	
Delivered Quantity	0					Schedule Variance	
Factors Contributing to Cost Variance and Projected Effects on Program Costs:				Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:			

Contract Number	W9124P-19-9-0001	Order Number	Original	Contract Title	GMLRS ENHANCED AW
CAGE Code	4CUP1	City	Huntsville	Contracting Office	DoD - Department of Defense
CAGE Legal Name	KORD Technologies	State/Province	AL	Contract Strategy	Select
Effort Number					
Supported Phase	Development	Latest Modification Number	4	Definitization Date	
Contract Type	Other Transaction	Latest Modification Date	8/13/2021	Work Start Date	4/29/2021
Technical Data Rights	None	<p>Notes GMLRS Enhanced AW was awarded 29 April 2021 as an OTA, as a CPFF Contract with a \$78.9M budget.</p> <p>The contractor will provide program, requirements, risk, integration, and production management and work alongside subcontractors to perform studies, analysis, and development of the GMLRS Buckshot Warhead for existing AW target sets and expanded target sets. The contractor will then work to integrate the new warhead, fuze, and Side-Mounted Proximity Sensor (SMPS) solutions into existing M30A2 guided munitions and future long range variants of M30A2 GMLRS. Qualification testing will be performed using the M30A2 GMLRS missile system as a baseline.</p> <p>This is a prototype project because the contractor will develop a physical and virtual model of GMLRS Buckshot to evaluate the technical feasibility, manufacturing feasibility, and military utility of enhanced lethality capabilities of GMLRS AW.</p>			
Contract/Effort Price, Quantity and Performance (\$M)					
Initial Target Price		Current Target Price		Contractor's EAC	

Initial Ceiling Price	\$ 78.90	Current Ceiling Price		PM's EAC			
Initial Quantity	0	BAC		BCWP		Work Completed	0.00%
Current Quantity	0	ACWP		BCWS		Cost Variance	
Delivered Quantity	0					Schedule Variance	
Factors Contributing to Cost Variance and Projected Effects on Program Costs:				Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:			

Technologies and Systems Engineering

Significant Technical Risks

Event	Date	Description
MS B	3/25/2003	GMLRS Unitary Milestone B (March 2003): The risk associated with Milestone B was related to the guidance set.
MS B	2/15/2012	GMLRS AW Milestone B (February 2012): Continuing Resolution Authority in FY 2012 has the potential to delay the award of the \$31M EMD contract, which would subsequently delay completion of EMD and subsequent production. Secondly, limited time between the expected FRP decision and the effective date of the DoD Cluster Munitions Policy prevents the Army from procuring "sufficient" inventory of GMLRS Alternative Warhead before the M30 GMLRS rockets are removed from inventory.
MS C	3/31/2003	GMLRS Dual Purpose Improved Conventional Munition Milestone C (March 2003): The risks associated with Milestone C were reliability of new grenades meeting 1% dud rate and the guidance set.
MS C	3/31/2007	GMLRS Unitary Milestone C (March 2007): The risk associated with Milestone C was related to the guidance set.
MS C	5/31/2015	GMLRS AW Milestone C (May 2015): Sub-optimal program funding identified in the FY 2016 PB is below historical averages in FY 2015 through FY 2017. Decreased funding translates to lower rocket quantities and higher unit cost per annual contract. Failure to fund to the optimal rate could drive affordability concerns and cause second-tier subcontractors to not bid on GMLRS contracts. Secondly, material costs impact affordability since tungsten is a commodity with prices that fluctuate.
Current	5/19/2021	MLRS Family of Munitions Common Test Set has a risk with Authority To Operate on formally qualified ERG FCS SW v1.0 unavailable to support Operational Test Flights, this risk was identified on May 19, 2019 working with the contractor the problem has been resolved and the risk completed December 17, 2021.

Deliveries and Expenditures

Quantities	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	431	380	431	88.00%
Procurement	42,930	42,930	87,174	49.24%
Total	43,361	43,310	87,605	49.43%

Years Appropriated to date	23	Total Years Appropriated Funding (Current Baseline):	30	Percent Years Appropriated:	76.67%
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Appropriation Category (\$Millions)	Then Year Appropriated Amount	Then Year Expended Amount
RDT&E	1,288.80	996.24
Procurement	8,219.10	5,370.32
MILCON	0.00	0.00
Acq O&M	13.30	12.10
Total Appropriated/Expended	1,291.97	982.29
Percent Appropriated/Expended	65.08%	43.60%

Deliveries and Expenditures Notes:

Deliveries and Expenditures as of March 31, 2022.

Low-Rate Initial Production

	Initial Decision LRIP	Current Total LRIP
Approval Date	3/24/2003	1/7/2013
Approval LRIP Quantity	13,998	4,445
Approval Document Title	Milestone C ADM (DPICM)	Acquisition Strategy (AW)
Start Year	2003	2003
End Year	2005	2015

Rationale if quantity exceeds 10% of the total number of articles to be produced: CUI:

Quantity Note: CUI:

The GMLRS DPICM Milestone C ADM signed on March 24, 2003, approved an 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, approved an LRIP quantity not to exceed 3,480 rockets based on the total expected procurement quantity of 34,848. The actual GMLRS Unitary LRIP quantity is 2,484 rockets.

The GMLRS AW Milestone B ADM signed on February 19, 2012, 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 were procured to support IOT&E during EMD.

Operating and Support (O&S) Cost

Total Program O&S Costs Compared with Baseline

Base Year: 2003

	Current Base Year Objective	Current Base Year Threshold	Current Base Year Estimate	Current Then Year Estimate	Deviation?
Total O&S (\$Millions)	\$ 204.80	\$ 225.30	\$ 398.90	\$ 762.10	Yes

Deviation Explanation: The O&S cost deviation was initially reported in the December 2017 SAR and is due to an increase in quantities from 43,560 to 87,174 to support the Total Munitions Requirements.

Operating and Support Cost Breakdown

Category (Base Year \$Millions)	System Name: GMLRS AW	System Name: Unitary	System Name: DPICM
Unit-Level Manpower	\$ 0.0	\$ 0.0	\$ 0.0
Unit Operations	\$ 1.4	\$ 1.1	\$ 0.1
Maintenance	\$ 76.8	\$ 60.1	\$ 5.7
Sustaining Support	\$ 132.2	\$ 103.5	\$ 9.8
Continued System Improvements	\$ 4.4	\$ 3.4	\$ 0.3

Other	\$0.00	\$0.00	\$0.00
Total O&S	\$ 214.8	\$ 168.1	\$ 15.9

Cost Estimate Source

Type: Program Office Estimate

Approval Authority and Date: ASA(FM&C) approved Army Cost Position 20 July 2021

Note:

O&S Notes:

Total O&S Cost = Average Annual Cost per Rocket Pod Number of Rocket Pods x Life per Rocket Pod = \$2.7453K x 14,529 Rocket Pods x 10 years = \$398.9(BY2003\$M).