

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 0205778A / Guided Multiple-Launch Rocket System (GMLRS)
--	--

COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	112.468	72.817	63.937	-	63.937	-	-	-	-	-	-
EG2: GMLRS Alternative Warheads	-	11.090	13.986	24.088	-	24.088	-	-	-	-	-	-
EG3: Guided MLRS	-	101.378	58.831	39.849	-	39.849	-	-	-	-	-	-

Program MDAP/MAIS Code: 260

A. Mission Description and Budget Item Justification

Guided Multiple-Launch Rocket System (GMLRS) rockets are surface-to-surface artillery rockets fired from the Multiple Launch Rocket System (MLRS) and High Mobility Artillery Rocket System (HIMARS) launchers. GMLRS rockets provide 24/7, all-weather precision fires to engage both area and point targets at short, medium, and long ranges. The GMLRS Program currently consists of multiple variants: GMLRS Unitary utilizes a 200 pound high explosive warhead to engage point targets with limited collateral damage; GMLRS Dual Purpose Improved Conventional Munition (DPICM) cluster munition to engage area or imprecisely located targets and GMLRS Alternative Warhead (AW) which has been developed as a non-cluster munition to engage the same target set as GMLRS DPICM. GMLRS DPICM Production was terminated in response to the June 2008 Department of Defense (DoD) Cluster Munitions Policy. GMLRS Unitary and AW are currently in full rate production.

The 26 October 2016 Deputy Secretary's Management Action Group (DMAG) directed the Army to define and execute an effort for GMLRS modifications that would extend the maximum range (Extended Range (ER) GMLRS) and integrate sensors and seekers into the rocket to engage complex targets with greater precision at greater ranges. These modifications to GMLRS were designated by the Army Acquisition Executive as an engineering change proposal (ECP) and not as a new program. During the FY23-27 POM review, the Army withdrew their support for a seeker spiral in favor of integrating an Enhanced Area Warhead.

The GMLRS program will develop nascent capability and support Army demonstration and test initiatives to increase integrated offensive and defensive capability across warfighter functions and multiple domains.

The GMLRS program will continue to leverage ongoing Government and Industry research and development efforts to extend range, increase survivability, and enhance lethality. The EG2 funding line will qualify and integrate an enhanced area warhead that will improve lethality. The EG3 funding line enables GMLRS enhancements, including ER GMLRS modification, statutorily required upgrades such as development of Assured Positioning, Navigation, and Timing (A-PNT), and aging technology mitigation and upgrades.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army	Date: May 2021
---	-----------------------

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0205778A / <i>Guided Multiple-Launch Rocket System (GMLRS)</i>
---	---

B. Program Change Summary (\$ in Millions)	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>
Previous President's Budget	117.294	75.575	64.728	-	64.728
Current President's Budget	112.468	72.817	63.937	-	63.937
Total Adjustments	-4.826	-2.758	-0.791	-	-0.791
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.826	-2.758			
• Adjustments to Budget Years	-	-	-0.791	-	-0.791

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army										Date: May 2021		
Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0205778A / Guided Multiple-Launch Rocket System (GMLRS)				Project (Number/Name) EG2 / GMLRS Alternative Warheads			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
EG2: GMLRS Alternative Warheads	-	11.090	13.986	24.088	-	24.088	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The United States (U.S.) Army initially funded the development of the Guided Multiple Launch Rocket System (GMLRS) Alternative Warhead (AW) increment under the EG2 - GMLRS Alternative Warheads project code. GMLRS AW entered full rate production in 2015. The 26 October 2016 Deputy Secretary's Management Action Group (DMAG) directed the Army to define and execute an effort for a GMLRS modification that would integrate a seeker into the rocket.

The Fiscal Year (FY) 2022 dollars in the amount of \$24.088 million supports the development, qualification, and integration of a side mounted proximity sensor (developed under ER GMLRS (EG3)), a more robust warhead fuze, and an enhanced area warhead to improve area effects lethality. The warhead development effort leverages previous work that assessed payload options; that work was funded with Guided MLRS (EG3) funding in prior years. The warhead development effort will continue to leverage EG3 funding as necessary to further this effort.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: Enhanced Warhead	10.367	8.840	24.088
Description: Modify the AW warhead, proximity sensor, and warhead fuze for increased lethality against light armored targets.			
FY 2021 Plans: FY 2021 plans include funding for component level test support for the Enhanced AW warhead.			
FY 2022 Plans: Build prototype warheads and Side Mounted Proximity Sensor (SMPS). Complete rocket operational flight software and launcher software update/modification. Conduct component level qualification and begin system qualification flight testing.			
FY 2021 to FY 2022 Increase/Decrease Statement: Enhanced warhead development was originally initiated and funded under GMLRS enhancements (EG3). Funding increase is due to the transition of this effort from warhead and SMPS component development to system/rocket level qualification testing in FY 2022.			
Title: Assured Position, Navigation, and Timing	0.723	5.146	-
Description: Address issues related to maintaining accuracy in a contested environment, improving accuracy over longer ranges, and compliance with statutory GPS requirements.			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / <i>Guided Multiple-Launch Rocket System (GMLRS)</i>	Project (Number/Name) EG2 / <i>GMLRS Alternative Warheads</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
<i>FY 2021 Plans:</i> Supports APNT development effort through analysis, modeling and simulations.			
<i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> Assured Position, Navigation, and Timing (APNT) is an effort that has been shared between the EG2 and EG3 lines. The decrease in FY 2022, represent this effort is being addressed under the EG3 funding line.			
Accomplishments/Planned Programs Subtotals	11.090	13.986	24.088

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• C64400: <i>Guided MLRS Rocket (GMLRS)</i>	1,136.794	912.997	935.917	-	935.917	-	-	-	-	-	-
• EG3: <i>Guided MLRS</i>	101.378	58.831	39.849	-	39.849	-	-	-	-	-	-
• C57701: <i>GMLRS MOD</i>	5.094	-	-	-	-	-	-	-	-	-	-

Remarks
GMLRS missile Army procurement funding (MiPA) includes C65404 and C65406.

D. Acquisition Strategy
GMLRS AW is currently in Full Rate Production. The enhanced lethality warhead will be fully qualified at the system/rocket level. Once the warhead completes Type Classification/Materiel Release it will replace the current AW warhead in production. All GMLRS variants are procured under C64400.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / Guided Multiple-Launch Rocket System (GMLRS)	Project (Number/Name) EG2 / GMLRS Alternative Warheads
--	--	--

Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Program Management	MIPR	STORM Project Office : RSA	4.948	2.467		2.255		3.097		-		3.097	0.000	12.767	-
Subtotal			4.948	2.467		2.255		3.097		-		3.097	0.000	12.767	N/A

Remarks
STORM-Strategic and Operational Rockets and Missiles; RSA-Redstone Arsenal

Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AWP Contracts (Multiple)	Various	NGDS (Plymouth, MN) LMMFC (Dallas, TX) : Systems Integrator	9.955	-		-		-		-		-	0.000	9.955	-
Other Government Agencies	MIPR	CCDC/AvMC : RSA	3.557	2.435	Feb 2020	6.673	Jan 2021	3.491	Jan 2022	-		3.491	0.000	16.156	-
Enhanced Warhead	C/CPFF	Kord : Huntsville, AL	-	5.688	Mar 2020	-		17.500	Mar 2022	-		17.500	0.000	23.188	-
Subtotal			13.512	8.123		6.673		20.991		-		20.991	0.000	49.299	N/A

Remarks
AWP-Alternative Warhead Program; Various-Competitive/Firm Fixed Price/Sole Source/Cost Plus Fixed Fee; CCDC-Combat Capabilities Development Command; AvMC-Aviation and Missile Center; RSA-Redstone Arsenal; NGDS-Northrop Grumman Defense Systems; MN-Minnesota; LMMFC-Lockheed Martin Missile and Fire Control; TX-Texas; AL-Alabama

Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Support for Seeker	MIPR	WSMR, : NM	14.363	-		-		-		-		-	0.000	14.363	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / <i>Guided Multiple-Launch Rocket System (GMLRS)</i>	Project (Number/Name) EG2 / <i>GMLRS Alternative Warheads</i>
--	---	---

Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Support for Warhead	MIPR	WSMR, RTC, AVMC : NM, Redstone Arsenal	-	0.500		5.058		-		-		-	0.000	5.558	-
Subtotal			14.363	0.500		5.058		-		-		-	0.000	19.921	N/A

Remarks
 WSMR-White Sands Missile Range; NM-New Mexico
 RTC- Redstone Test Center; Redstone Arsenal, AL
 AVMC- Aviation and Missiles Center; Redstone Arsenal, AL
 Cost for Prior Years Test Support is for efforts prior to Seeker Test Support

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	32.823	11.090	13.986	24.088	-	24.088	0.000	81.987	N/A

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / Guided Multiple-Launch Rocket System (GMLRS)	Project (Number/Name) EG2 / GMLRS Alternative Warheads	

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Assured Position, Navigation, and Timing Development																												
Develop an Enhanced Lethality Warhead																												
Assess Tooling																												
Modify/Qualify SMPS																												
Preliminary Design Review (Warhead)																												
Critical Design Review (Warhead)																												
Build Prototypes																												
OFS/Launcher Software Modification																												
System Qualification Flight Test																												
Functional Configuration Audit																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / <i>Guided Multiple-Launch Rocket System (GMLRS)</i>	Project (Number/Name) EG2 / <i>GMLRS Alternative Warheads</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Assured Position, Navigation, and Timing Development	2	2021	4	2024
Develop an Enhanced Lethality Warhead	1	2021	2	2023
Assess Tooling	1	2021	2	2021
Modify/Qualify SMPS	1	2021	4	2021
Preliminary Design Review (Warhead)	3	2021	3	2021
Critical Design Review (Warhead)	1	2022	1	2022
Build Prototypes	2	2021	3	2021
OFS/Launcher Software Modification	3	2021	3	2022
System Qualification Flight Test	2	2022	1	2023
Functional Configuration Audit	2	2023	2	2023

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / <i>Guided Multiple-Launch Rocket System (GMLRS)</i>	Project (Number/Name) EG3 / <i>Guided MLRS</i>
--	---	--

COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
EG3: <i>Guided MLRS</i>	-	101.378	58.831	39.849	-	39.849	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The United States (U.S.) Army continues to explore ways to enhance Guided Multiple Launch Rocket System (GMLRS) rockets and common components and to mitigate aging technology issues under Project EG3 Guided MLRS. The Army is requesting funding for the following GMLRS Research, Development, Test and Evaluation (RDT&E) activities: (1) evaluation of enhanced operational capabilities to provide more flexibility across the target set to include increased range, flight performance, and end-game optimization; (2) investigation of potential life cycle cost savings through mitigation of aging technology and second source qualification; (3) Preplanned Product Improvement (P3I); (4) evaluation and development of technologies to enhance overall product performance and survivability to include Positioning, Navigation and Timing (PNT); and (5) system test and evaluation.

The Fiscal Year (FY) 2022 dollars in the amount of \$39.990 million will continue to investigate and develop Objective Additional Performance Attribute (APA) options including Extended Range GMLRS, Assured Position, Navigation, and Timing (A-PNT) solutions, and continue qualification of key rocket upgrades.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
<p>Title: GMLRS enhancements</p> <p>Description: Assess and improve GMLRS rockets</p> <p>FY 2022 Plans: Develop and assess methods to improve rocket effectiveness. Continue to assess payload, motor, and guidance/control options to meet Objective Additional Performance Attributes (APAs).</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: While funding for this effort in FY 2021 was diverted to the ER GMLRS effort, the need to assess opportunities to improve rocket effectiveness continues. The funding for this effort increases in FY 2022 because there is reduced need to reprioritize these funds towards ER GMLRS and increased need to assess opportunities to improve rocket effectiveness.</p>	26.047	-	3.119
<p>Title: GMLRS cost savings initiatives and obsolescence mitigation</p> <p>Description: Address issues related to aging technology, study cost reduction initiatives and opportunities for second source supplier efficiencies, and increase system survivability. Investigate potential for development of alternate extended range GMLRS rocket motor to reduce costs for this capability.</p> <p>FY 2022 Plans:</p>	21.409	-	5.715

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021		
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / <i>Guided Multiple-Launch Rocket System (GMLRS)</i>	Project (Number/Name) EG3 / <i>Guided MLRS</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>Conduct trade studies and perform cost benefit analyses on material changes to ER GMLRS components that are Cost Reduction Initiative (CRI) candidates.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: This effort was deferred in FY2021 due to funding constraints. The increase in funding for FY2022 represents the effort being reinitiated in FY2022 with a focus on ER GMLRS cost reduction.</p>				
<p>Title: GMLRS Assured Position Navigation and Timing (A-PNT)</p> <p>Description: Address issues related to maintaining accuracy in a contested environment, improving accuracy over longer ranges, and compliance with statutory GPS requirements.</p> <p>FY 2021 Plans: Execute funding obligated in FY 2020 to address development of a robust GPS solution and issues related to aging technology design.</p> <p>FY 2022 Plans: FY 2022 plans are to migrate from a NAVSTRIKE GPS receiver to a NAVSTORM + receiver to improve accuracy at longer ranges and maintain accuracy in a contested environment. FY 2022 funds the contractor's efforts in component level design verification and qualification in preparation for system level integration and testing. Funds also support CCDC/AvMC analysis and simulations to validate component performance and qualification.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Funding increase from FY 2021 to FY 2022 is due to changing the focus from development to prototype hardware, test, and qualification.</p>		16.089	0.225	18.811
<p>Title: Extended Range (ER) GMLRS and complementary rocket pod development</p> <p>Description: Complete rocket pod development and conduct system level ground tests.</p> <p>FY 2021 Plans: Will complete ER GMLRS System Qualification ground testing.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Funding decreases due to the completion of this effort, remainder of Extended Range GMLRS effort captured separately.</p>		7.872	4.697	-
<p>Title: Extended Range (ER) GMLRS development</p> <p>Description: Qualification and integration of ER GMLRS.</p>		29.961	53.909	12.204

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / <i>Guided Multiple-Launch Rocket System (GMLRS)</i>	Project (Number/Name) EG3 / <i>Guided MLRS</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
<p><i>FY 2021 Plans:</i> Fund remaining balance of the Extended Range GMLRS Firm Fixed Price contract that begins system level flight tests and resolves identified issues.</p> <p><i>FY 2022 Plans:</i> OEM challenges and delays due to component hardware availability and qualification have extended the overall ER GMLRS development and qualification into FY22. FY22 plans include Functional Configuration Audit (FCA), and the completion of Qualification Flight Testing and Operational Flight Testing.</p> <p><i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> Continue system level qualification flight testing activity, and prepare for Operational testing.</p>			
Accomplishments/Planned Programs Subtotals	101.378	58.831	39.849

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• C64400: <i>Guided MLRS Rocket (GMLRS)</i>	1,136.794	912.997	935.917	-	935.917	-	-	-	-	-	-
• EG2: <i>GMLRS Alternative Warheads</i>	11.090	13.986	24.088	-	24.088	-	-	-	-	-	-
• C57701: <i>GMLRS MOD</i>	5.094	-	-	-	-	-	-	-	-	-	-

Remarks
GMLRS Procurement funding includes C65404 and C65406.

D. Acquisition Strategy
Project EG3 Guided MLRS is supports, investigates, and develops alternative material changes to improve the GMLRS family of munitions as they are identified by the material developer or combat developer. This project also supports A-PNT activities to improve the overall system performance in a contested environment, and mitigates performance shortfalls or supply chain limitations. The ER GMLRS effort is pursuing a strategy of modifying the current GMLRS system through the Engineering Change Proposal (ECP) process in order to increase its range. Where possible the improvements and modifications are incrementally integrated into the current GMLRS and ER GMLRS systems through the Engineering Change Proposal (ECP) process.

Development, integration, and testing of GMLRS systems solutions, including test planning to support an annual PEO MS-led Multi-Domain Operations test/ demonstration event beginning in FY23, to include biennial Survivability Resiliency/Cyber-Electromagnetic Activities exercises with an event planned in FY22.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / Guided Multiple-Launch Rocket System (GMLRS)	Project (Number/Name) EG3 / Guided MLRS
--	--	---

Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Program Management	MIPR	Various : RSA	16.259	0.110	Feb 2020	0.017	Jan 2021	0.543	Jan 2022	-		0.543	Continuing	Continuing	Continuing
Subtotal			16.259	0.110		0.017		0.543		-		0.543	Continuing	Continuing	N/A

Remarks
MIPR-Military Interdepartmental Purchase Request; RSA-Redstone Arsenal, Alabama; TBD-To Be Determined

Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Unitary Contracts/Multiple	SS/FPIF	LMMFC : Dallas, TX	60.370	-		-		5.637	Jan 2022	-		5.637	Continuing	Continuing	Continuing
IM Development & Qualification Contracts/ Multiple	C/FPIF	Orbital ATK, Aerojet Rocketdyne : Rocket Center, WV; Bristow, VA	36.380	-		-		-		-		-	0.000	36.380	-
GMLRS Extended Range	SS/FFP	LMMFC : Dallas, TX	126.696	20.000	Jul 2020	48.261	May 2021	-		-		-	Continuing	Continuing	Continuing
APNT Development	C/CPFF	Kord : Huntsville, AL	-	13.980		-		11.500	Jan 2022	-		11.500	0.000	25.480	-
Alternative Extended Range Motor	TBD	AMS : TBD	-	19.972		-		-		-		-	0.000	19.972	-
Enhanced Alternative Warhead	C/FPIF	Kord : Huntsville, AL	-	24.964		-		-		-		-	0.000	24.964	-
Other Government Agencies	MIPR	Various : Various	-	13.712		5.856		15.006	Dec 2021	-		15.006	0.000	34.574	-
Subtotal			223.446	92.628		54.117		32.143		-		32.143	Continuing	Continuing	N/A

Remarks
SS/FPIF-Sole Source/Fixed-Price Incentive Firm; LMMFC - Lockheed Martin Missile and Fire Control; TX - Texas; C/CPFF- Competitive/Cost Plus Fixed Fee; C/FPIF - Competitive/Fixed-Price Incentive Firm; WV - West Virginia; VA - Virginia; TBD - To Be Determined

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / Guided Multiple-Launch Rocket System (GMLRS)	Project (Number/Name) EG3 / Guided MLRS
--	--	---

Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Support	MIPR	Various : Various	35.625	8.640	Feb 2020	4.697	Jan 2021	7.163	Jan 2022	-		7.163	Continuing	Continuing	Continuing
Subtotal			35.625	8.640		4.697		7.163		-		7.163	Continuing	Continuing	N/A

Remarks
Performing Activities include Army Research, Development and Engineering Command (AMRDEC), Army Research Laboratory (ARL), and Redstone Test Center (RTC).

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	275.330	101.378	58.831	39.849	-	39.849	Continuing	Continuing	N/A

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / Guided Multiple-Launch Rocket System (GMLRS)	Project (Number/Name) EG3 / Guided MLRS	

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Assess and improve GMLRS rockets																												
Aging Technology Mitigation/Cost Reduction Opportunities and 2																												
Second Source ER GMLRS Motor																												
Cost Reduction Initiatives for ER GMLRS																												
GMLRS Assured Position, Navigation, and Timing (A-PNT)																												
IM/Enhanced Technology Improvements																												
Guidance Set M-Code Compliance																												
Conduct System Test and Evaluation activities																												
ER GMLRS Design Verification Testing																												
ER GMLRS Ground Testing																												
ER GMLRS System Qualification Flight Testing																												
ER GMLRS Operational Testing																												
Flight Termination System Development																												

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / <i>Guided Multiple-Launch Rocket System (GMLRS)</i>	Project (Number/Name) EG3 / <i>Guided MLRS</i>	

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Guidance Set Modeling and Simulation / Hardware-in-the-Loop																												
Guidance Set Flight Testing																												
Qualification and Integration of GMLRS extended range effort																												
Critical Design Reviews																												
Operational Flight Software Development																												
Engineering Change Proposal (ECP) Cut-in Decision																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205778A / <i>Guided Multiple-Launch Rocket System (GMLRS)</i>	Project (Number/Name) EG3 / <i>Guided MLRS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Assess and improve GMLRS rockets	1	2015	4	2026
Aging Technology Mitigation/Cost Reduction Opportunities and 2nd Source	1	2015	4	2026
Second Source ER GMLRS Motor	4	2020	4	2020
Cost Reduction Initiatives for ER GMLRS	2	2022	4	2023
GMLRS Assured Position, Navigation, and Timing (A-PNT)	3	2021	4	2026
IM/Enhanced Technology Improvements	1	2015	4	2026
Guidance Set M-Code Compliance	2	2023	3	2025
Conduct System Test and Evaluation activities	4	2015	2	2023
ER GMLRS Design Verification Testing	2	2020	2	2021
ER GMLRS Ground Testing	2	2020	1	2022
ER GMLRS System Qualification Flight Testing	4	2020	2	2023
ER GMLRS Operational Testing	3	2023	3	2023
Flight Termination System Development	3	2018	2	2021
Guidance Set Modeling and Simulation / Hardware-in-the-Loop	3	2021	4	2021
Guidance Set Flight Testing	1	2022	3	2022
Qualification and Integration of GMLRS extended range effort	3	2018	3	2023
Critical Design Reviews	3	2019	3	2021
Operational Flight Software Development	3	2018	1	2023
Engineering Change Proposal (ECP) Cut-in Decision	2	2023	2	2023