

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	42374	59552	27693	Continuing	Continuing
090 MLRS HIMARS	4304	3761	1997	Continuing	Continuing
093 Multi-Launch Rocket System (MLRS)	4539	4095	4538	Continuing	Continuing
784 GUIDED MLRS	33531	51696	8957	Continuing	Continuing
78G GMLRS ALTERNATIVE WARHEADS			12201		12400

A. Mission Description and Budget Item Justification: The M142 High Mobility Artillery Rocket System (HIMARS) fully supports more deployable, affordable and lethal, Brigade Combat Teams, Fires Brigade, Modular Forces, and Joint Expeditionary Forces. The HIMARS launcher is a C-130 transportable, wheeled, indirect fire, rocket/missile launcher capable of firing all rockets and missiles in the current and future Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM) and Army Tactical Missile System (ATACMS) Family of Munitions (AFOM). The HIMARS launcher has extensive commonality with the MLRS M270A1 tracked launcher and consists of a Fire Control System, a carrier (FMTV XM1140 automotive chassis) and a launcher-loader module (LLM) that performs all operations necessary to complete a fire mission. The MFOM and AFOM are a family of rockets and missiles capable of attacking a variety of tactical and operational targets, providing the requisite range and lethality to support maneuver commanders out to 300 kilometers. HIMARS, when firing ATACMS and GMLRS, is capable of the precise attack of targets in both open and complex/urban terrain, with low collateral damage. HIMARS satisfies the Army's digitization requirements by interfacing with the Advanced Field Artillery Tactical Data System (AFATDS) fire support command and control system. HIMARS is interoperable with existing MLRS units in terms of communications and reloading capabilities. HIMARS is an all-weather, day/night, indirect fire system used in support of light, early and forced entry expeditionary operations using a more deployable, lethal, survivable and tactically mobile long range artillery system. The HIMARS is deployable worldwide and will operate in a wide range of climatic conditions. It is certified by the Air Force for fixed-wing air transport in a fully combat loaded, combat ready configuration. HIMARS, as part of the Fires Brigade, will provide fires that shape, shield and isolate the battle space. Using both precision GMLRS and ATACMS Unitary munitions, HIMARS provides close support fires for Troops in Contact (TIC) in both open and urban terrain. The HIMARS provides Joint Expeditionary Forces a flexible and lethal rocket/missile capability that can be employed by platoon, battery, or battalion, each with the ability to operate independently for a limited period. HIMARS units can be quickly tailored for centralized or decentralized execution throughout the depth and breadth of the battle space in support of distributed forces. The program also includes training devices for tactical training, classroom training, and handling exercises. HIMARS has been deployed to both Operation Iraqi Freedom and Operation Enduring Freedom with great success. HIMARS is also a key component of the Marine Corps Future Fighting Effort.

The M270A1 upgraded MLRS launcher is mounted on a Bradley Fighting Vehicle chassis, and is capable of firing the MFOM and the AFOM, including precision munitions, to a range of 300KM.

GMLRS is a precision munition providing increased range to 70KM, and Global Positioning System (GPS) accuracy. Fired from M270A1 and HIMARS launchers, GMLRS comes in two variants: DPICM contains 414 submunitions, for attacking area targets with improved accuracy and significantly reduced hazardous duds; and GMLRS Unitary has a 200lb High Explosive (HE) warhead for attacking point targets with reduced collateral damage.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM

B. Program Change Summary

	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	53712	59749	20648
Current BES/President's Budget (FY 2010)	42374	59552	27693
Total Adjustments	-11338	-197	7045
Congressional Program Reductions		-197	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-9901		
SBIR/STTR Transfer	-1437		
Adjustments to Budget Years			7045

Change Summary Explanation: Funding - FY 2008 - Funds reprogrammed (-9,901) to higher priority requirements.
 FY 2010: Funds increased to support GMLRS Alternative Warhead.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM			PROJECT 090	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
090 MLRS HIMARS	4304	3761	1997	Continuing	Continuing

A. Mission Description and Budget Item Justification: The M142 High Mobility Artillery Rocket System (HIMARS) fully supports more deployable, affordable, and lethal Brigade Combat Teams, Fires Brigade, Modular Forces and Joint Expeditionary Forces. It is a light weight, deployable system which provides long range precision strike capability in both early and forced entry scenarios. Mounted on a medium tactical wheeled vehicle chassis, HIMARS is transportable in a C-130 aircraft, and is self-loading and self-locating using Global Positioning System (GPS) technology. It fires the full Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM) and Army Tactical Missile System (ATACMS) Family of Munitions (AFOM). Additionally a HIMARS battery requires significantly reduced airlift resources that are required to transport a battery of the tracked M270/M270A1 MLRS. HIMARS, as part of the Fires Brigade, provides fires that shape, shield and isolate the battle space. Using both Precision Guided Multiple Launch Rocket System (GMLRS) and ATACMS Unitary munitions, HIMARS provides close support fires for Troops In Contact (TIC) in both open and urban terrain. HIMARS has been deployed to both Operation Iraqi Freedom and Operation Enduring Freedom with great success. HIMARS is also a key component of the Marine Corps Future Fighting Effort.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Continue system design and Production Qualification Testing (PQT), conduct Functional Configuration Audit (FCA), and develop Integrated Logistics Products (ILP); integrate and test Horizontal Technology Insertion (HTI) upgrades including Increased Crew Protection Cab, Enhanced Command and Control, Improved Initialization, Obsolescence Mitigation, Tactical Fire Control, Embedded Training Launcher Loader Module (LLM) electric drive, Diagnostics/Pronostics, Alternate Coupling, Situational Awareness, Long Range Communication and future munition integration. Perform technical assessments, concept studies, cost reduction, risk reduction, field issue resolution and required documentation.	4304	3655	1997
Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) Programs		106	
Total	4304	3761	1997

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
HIMARS Launcher (C02901)	225133	245315	209061	Continuing	Continuing
HIMARS Modifications (C67501)	10470	16360	71081	Continuing	Continuing
HIMARS Modifications: Initial Spares (CA0289)	1591	1053	1807	Continuing	Continuing
Initial Spares, HIMARS (CA0288)	12563	11911	8943	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM

PROJECT

090

C. Acquisition Strategy The HIMARS program is currently in Full Rate Production (FRP) and awarded the FRP-3 contract December 2007. HIMARS follow-on Horizontal Technology Insertion (HTI) efforts include the Increased Crew Protection, Enhanced Command and Control, Improved Initialization, and Long Range Communications.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM							090		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Risk Reduction/ Maturation Contract	SS/CPIF & CPAF	LMMFC, Texas	113610							Cont.	Cont.	
Path through Operational Test	SS/CPFF	LMMFC, Texas	11809							Cont.	Cont.	
Work Directives/ Chassis and Cab	N/A	TACOM (S&S)	5733							Cont.	Cont.	
Battle Command	SS/CPFF	CECOM, STRICOM, AMRDEC, Tchrizon, LMMFC, Texas	9612	1077	2-3Q	2018	2-3Q	1054	2-3Q	Cont.	Cont.	
Government Support	N/A	AMCOM/ GSA, RSA & TSM	17032	194	2-3Q	316	2-3Q	256	2-3Q	Cont.	Cont.	
Increased Crew Protection	SS/CPFF	LMMFC, Texas	24430	1611	2-3Q	201	2-3Q			Cont.	Cont.	
Subtotal:			182226	2882		2535		1310		Cont.	Cont.	

Remarks: TACOM - Tank Automotive & Armaments Command; AMCOM - Aviation & Missile Command
 RSA - Redstone Arsenal Alabama; STRICOM - Simulation Training and Instrument Command
 S&S - Stewart & Stevenson; GSA - General Services Administration
 LMMFC - Lockheed Martin Missile and Fire Control
 TSM - TRADOC System Manager; TBD - To Be Determined; N/A - Not Applicable
 CECOM - US Army Communication - Electronics Command
 AMRDEC - Aviation and Missile Research Development and Engineering Center
 SS - Sole Source; CPIF - Cost Plus Incentive Fee; CPAF - Cost Plus Award Fee
 CPFF - Cost Plus Fixed Fee; UA - Unit of Action

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C /CPFF	Camber Research/S3/TMI, Alabama	2582	385	2-3Q	354	2-3Q	325	2-3Q	Cont.	Cont.	
Subtotal:			2582	385		354		325		Cont.	Cont.	

Remarks: S3 - Systems Studies Simulation, Inc., TMI - Tec Masters Inc

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM	PROJECT 090
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III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	N/A	Fort Hood,ATEC,APG MD,WSMR NM & RTTC RSA	42859	916	2-4Q	743	2-4Q	224	2-4Q	Cont.	Cont.	
Subtotal:			42859	916		743		224		Cont.	Cont.	

Remarks: APG MD - Aberdeen Proving Ground, Maryland
 WSMR NM - White Sands Missile Range, New Mexico
 RTTC RSA - Redstone Technical Test Center
 ATEC - US Army Test and Evaluation Command

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	N/A	PFRMS Project Office, Redstone Arsenal, AL	9015	121	1-4Q	129	1-4Q	138	1-4Q	Cont.	Cont.	
Subtotal:			9015	121		129		138		Cont.	Cont.	

Remarks: PFRMS - Precision Fires Rocket and Missile Systems

Project Total Cost:	236682	4304		3761		1997		Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE																PROJECT														
7 - Operational system development		0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM																090														
Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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	1	2	3	4
Increased Crew Protection Development and Live Fire Test and Evaluation (LFT&E)	Increased Crew Protection & LFT&E																															
Central Technical Support Facility Certification	Central Tech Spt Facility Certification																															
Enhanced Command and Control Development and Testing	Enhanced Cmd and Ctrl Dev/Test																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM					PROJECT 090	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Increased Crew Protection Development and Live Fire Test and Evaluation (LFT&E)	1Q - 4Q	1Q - 3Q						
Central Technical Support Facility Certification	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Enhanced Command and Control Development and Testing	1Q - 4Q	1Q - 4Q	1Q - 4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM			PROJECT 093
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
093 Multi-Launch Rocket System (MLRS)	4539	4095	4538	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Multiple Launch Rocket System (MLRS) product improvement program provides funding for research, development, and integration efforts on the MLRS necessary for sustainment, obsolescence mitigation, reliability improvements, incorporation of advanced technologies, and decreasing the logistics footprint. This effort includes performing technical assessments, concept studies and risk reduction efforts for incorporation of future requirements. The MLRS product improvement program maintains compliance with Intra-Army Interoperability and Digital Communications via Joint Variable Message Format.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Command, Control, Communications, Computers, and Intelligence (C4I)/Interoperability Certification Tests, Improved Operational Timeline.	2370	1769	2150
Network interoperability Testing/Certification.	558	356	376
Perform technical assessments, concept studies, and risk reduction.	1611	1855	2086
Small Business Innovative Research/Small Business Technology Transfer Program		115	
Total	4539	4095	4612

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
MLRS Mods(C67500)	4802	1866	22434	Continuing	Continuing
MLRS Mod Initial Spares (CA0265)	1036	1037	1021	Continuing	Continuing

Comment:

C. Acquisition Strategy The Multiple Launch Rocket System (MLRS) product improvement program ensures compliance as defined in the Department of Defense (DoD) Information Technical Standards. Funding is provided to several Government Agencies/Laboratories each Fiscal Year in support of this program. Support efforts include Enhanced C2, Interoperability Certifications, and Information Assurance compliance.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM							093		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contract	CPFF	LMMFC-D, Dallas, Texas	22028	200	1-3Q	442	1-3Q	425	1-3Q	Cont.	Cont.	
Government Support	N/A	AMRDEC-RSA AL, FT SILL OK, CECOM-NJ	6678	2411	1-3Q	2209	1-3Q	3165	1-3Q	Cont.	Cont.	
Subtotal:			28706	2611		2651		3590		Cont.	Cont.	
Remarks: CPFF - Cost Plus Fixed Fee LMMFC-D - Lockheed Martin Missile and Fire Control-Dallas N/A - Not Applicable AMRDEC - United States Army Research, Development, and Engineering Command RSA AL - Redstone Arsenal, Alabama OK - Oklahoma CECOM - United States Army Communication - Electronics Command												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	Various	Multiple	673	1074	1-3Q	548	1-3Q	451	1-3Q	Cont.	Cont.	
Subtotal:			673	1074		548		451		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support, Joint Interoperability Test Certificate	N/A	CTSF, Ft. Hood, Texas	1308	429	1-3Q		1-3Q	376	1-3Q	Cont.	Cont.	
Test Support	N/A	AMCOM, RTTC, Redstone Arsenal, Alabama	308			725	1-3Q			Cont.	Cont.	
Test Support	N/A	WSMR, New Mexico	442							Cont.	Cont.	
Subtotal:			2058	429		725		376		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM	PROJECT 093
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Remarks: CTSF - Central Test Support Facility AMCOM - Army Missile Command RTTC-Redstone Technical Test Center
WSMR - White Sands Missile Range

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	N/A	PFRMS Proj Ofc, Redstone Arsenal, Alabama	3115	425	1-4Q	171	1-4Q	121	1-4Q	Cont.	Cont.	
Subtotal:			3115	425		171		121		Cont.	Cont.	

Remarks: PFRMS - Precision Fires Rocket and Missile Systems

Project Total Cost:	34552	4539		4095		4538		Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE																PROJECT														
7 - Operational system development		0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM																093														
Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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	1	2	3	4
Comd, Cntrl, Com, Comp, and Intell (C4I)/Interop Cert Tests, Imp Oper Timeline	[Redacted]																															
Network Interoperability Testing/Certification	[Redacted]																															
Technical Assessments, Concept Studies, and Risk Reduction	[Redacted]																															
	[Redacted]																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM	PROJECT 093
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<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Comd, Cntrl, Com, Comp, and Intell (C4I)/Interop Cert Tests, Imp Oper Timeline	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Network Interoperability Testing/Certification	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Technical Assessments, Concept Studies, and Risk Reduction	1Q - 4Q	1Q - 4Q	1Q - 4Q					

Command, Control, Communications, Computers, and Intelligence (C4I)/Interoperability Certification Tests, Improved Operational Timeline.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM			PROJECT 784	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
784 GUIDED MLRS	33531	51696	8957	Continuing	Continuing

A. Mission Description and Budget Item Justification: Guided Multiple Launch Rocket System (GMLRS) munitions are the Army's primary organic Joint Expeditionary, all-weather, all-terrain, 24/7, tactical range precision guided rockets employed by modular Fires Brigades supporting Brigade Combat Teams (BCT), Divisions, Joint Special Operations Force (JSOF), and Joint Force combatant commanders. GMLRS are the primary munitions for units fielded with the High Mobility Artillery Rocket System (HIMARS) and Multiple Launch Rocket System (MLRS) M270A1 rocket and missile launcher platforms. GMLRS provides close, medium and long range pin point precision and area fires to destroy, suppress and shape threat forces and protect friendly forces against: cannon, mortar, rocket and missile artillery; light materiel and armor; personnel; command and control; and air defense surface targets. GMLRS is a major upgrade/replacement for the aging M26/A1/A2 rocket inventory that integrates a guidance and control package and an improved rocket motor achieving greater range and precision accuracy requiring fewer rockets to defeat targets than current artillery rockets, thereby reducing the logistics burden. There are two variants of GMLRS; GMLRS with Dual Purpose Improved Conventional Munitions (DPICM) and GMLRS with a 200 pound class high explosive warhead (Unitary). The GMLRS DPICM is a five nation cooperative program among France, Germany, Italy, United Kingdom and the United States. The GMLRS Unitary is a modification to the GMLRS DPICM integrating a multi-mode fuze and high explosive Insensitive Munition (IM) designed warhead making it an all-weather, low collateral damage, precision rocket. This expands the MLRS target set into urban and complex environments, adds point targets, and supports Troops in Contact (TIC). The alternative warhead will replace DPICM and service the DPICM target set and leave zero unexploded ordnance on the battlefield. This effort includes development and test activities. To meet Central Command Operational Need Statements, two quantities (486/972) of limited capability GMLRS Unitary rockets were accelerated and fielded in Iraq between June 2005 and December 2007. In the more than 1200 missions fired in Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF), the GMLRS Unitary Rocket has demonstrated high effectiveness and low collateral damage while supporting TIC. Continued GMLRS Unitary development efforts will incorporate trajectory shaping capability into the flight software. Additional material changes will provide operational flexibility and capability against an expanded target set. GMLRS is also a key component of the Marine Corps Future Fighting Effort.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Perform technical assessments, concept studies, prepare milestone documentation and risk reduction	5610	4709	1479
Conduct Development and Engineering for Insensitive Munitions (IM) Program	7928	4579	3721
Conduct Development Engineering; Design and Develop; Perform Integration and Test of Multi-Mode Fuzes and Alternative Warheads	15426	13792	
Conduct Engineering Development Test (EDT) and Production Qualification Test (PQT) Tests, Test Analysis, Functional Configuration Audit, Final Product Data Definition Package (PDDP), and System Integration Test		15194	1274
Conduct system test and evaluation activities	4567	12045	2483
Small Business Innovative Research/Small Business Technology Transfer Programs		1377	
Total	33531	51696	8957

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BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM			PROJECT 784	
<u>B. Other Program Funding Summary</u>		FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Missile Procurement Army - GMLRS (C64400)		263712	309205	354217	Continuing	Continuing

Comment:

C. Acquisition Strategy The Guided Multiple Launch Rocket System (GMLRS) Dual Purpose Improved Conventional Munitions (DPICM) is currently in Full Rate Production (FRP). The primary objective of the GMLRS DPICM System Development and Demonstration (SDD) was to develop a rocket with greater range and significantly enhanced accuracy with minimum impact on existing MLRS companion hardware and software. Other GMLRS development efforts include desired new rocket motor capabilities; design, evaluation, and test of alternative warhead technologies; and increased range.

The GMLRS Unitary Acquisition Strategy is a streamlined product improvement program. Initial configuration hardware maximizes commonality with GMLRS DPICM and incorporate a new warhead and multi-mode fuze (point detonation, airburst and delay). The European Cooperative Development Partners for GMLRS have expressed a desire to join the GMLRS Unitary program during the Production and Deployment Phase. In December 2004, the Army received an urgent need statement from Central Command requesting limited capability GMLRS Unitary rockets by fourth quarter FY06. In FY05, Congress encouraged the Army to accelerate the GMLRS Unitary program to field a quantity of not less than 450 rockets with limited capability no later than fourth quarter FY06. The first 72 limited capability GMLRS Unitary Rockets were fielded in theater during June 05. In the more than 1000 missions flown in Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF), the GMLRS Unitary Rocket has demonstrated high effectiveness and low collateral damage while supporting Troops in Contact (TIC).

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM							784		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
SDD DPICM Contract	SS/CPAF	LMMFCS Dallas, TX	91194								91194	
SDD Unitary Contract	SS/CPFF	LMMFCS Dallas, TX	226322	26239	1Q	36029	1Q	3860	1Q	Cont.	Cont.	
Government Support	N/A	AMCOM/AMRDEC, RSA	85401	1447	1-4Q	2690	1-4Q	800	1-4Q	Cont.	Cont.	
Subtotal:			402917	27686		38719		4660		Cont.	Cont.	

Remarks: DPICM - Dual Purpose Improved Conventional Munitions; SS/CPAF - Sole Source/Cost Plus Award Fee; SS/CPFF - Sole Source/Cost Plus Fixed Fee; LMMFCS - Lockheed Martin Missile and Fire Control System; TX - Texas; AMCOM-Aviation & Missile Command; AMRDEC - U.S. Army Research, Development & Engineering Command; RSA - Redstone Arsenal, Alabama; N/A - Not Applicable

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	Camber Research/S3/TMI, Alabama	22196	1446	1-3Q	1175	1-3Q		1-3Q	Cont.	Cont.	
Subtotal:			22196	1446		1175				Cont.	Cont.	

Remarks: C/CPFF-Cost/Cost Plus Fixed Fee
S3-Systems Studies Simulation, Inc.
TMI-Tec Masters, Inc.

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	N/A	WSMR, NM	115347	1696	1-4Q	8343	1-4Q	3618	1-4Q	Cont.	Cont.	
Subtotal:			115347	1696		8343		3618		Cont.	Cont.	

Remarks: WSMR, NM - White Sands Missile Range, New Mexico

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM							784		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	N/A	PFRMS Proj Ofc, RSA	23615	2703	1-4Q	3459	1-4Q	679	1-4Q	Cont.	Cont.	
Subtotal:			23615	2703		3459		679		Cont.	Cont.	
Remarks: PFRMS - Precision Fires Rocket and Missile Systems												
Project Total Cost:			564075	33531		51696		8957		Cont.	Cont.	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM

PROJECT
784

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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	1	2	3	4
Alternative Warhead																																
UNITARY FRP IOTE																																
(1) UNITARY IOC																																
UNITARY FRP																																
Technical Assessment/Concept Studies/Cost Reduction Studies																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM						PROJECT 784
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Alternative Warhead	1Q - 4Q	1Q - 4Q						
UNITARY FRP IOTE	2Q - 3Q							
UNITARY IOC		1Q						
UNITARY FRP		1Q						
Technical Assessment/Concept Studies/Cost Reduction Studies			1Q - 4Q					

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)		May 2009	
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
7 - Operational system development	0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM	784	
Funding in \$000			
Program	FY 2008	FY 2009	FY 2010
Guided MLRS			
Total Termination Liability Funding:			
<p>Remarks: The GMLRS Program Prime Contract Incorporates the "Limitation Of Funds" Clause (DFARS 52.232-22) to limit the government's liability. For the GMLRS Program, The "Limitation of Funds" Clause limits the government's financial liability per the Contract to those funds placed on contract plus any outstanding commitments plus costs associated with the orderly termination of contractual actions.</p>			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM			PROJECT 78G	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
78G GMLRS ALTERNATIVE WARHEADS			12201		12400

A. Mission Description and Budget Item Justification: Guided Multiple Launch Rocket System (GMLRS) munitions are the Army's primary organic Joint Expeditionary, all-weather, all-terrain, 24/7, tactical range precision guided rockets employed by modular Fires Brigades supporting Brigade Combat Teams (BCT), Divisions, Joint Special Operations Force (JSOF), and Joint Force combatant commanders. GMLRS are the primary munitions for units fielded with the High Mobility Artillery Rocket System (HIMARS) and Multiple Launch Rocket System (MLRS) M270A1 rocket and missile launcher platforms. GMLRS provides close, medium and long range pin point precision and area fires to destroy, suppress and shape threat forces and protect friendly forces against: cannon, mortar, rocket and missile artillery; light materiel and armor; personnel; command and control; and air defense surface targets. GMLRS is a major upgrade/replacement for the aging M26/A1/A2 rocket inventory that integrates a guidance and control package and an improved rocket motor achieving greater range and precision accuracy requiring fewer rockets to defeat targets than current artillery rockets, thereby reducing the logistics burden. There are two variants of GMLRS; GMLRS with Dual Purpose Improved Conventional Munitions (DPICM) and GMLRS with a 200 pound class high explosive warhead (Unitary). The GMLRS Alternative Warhead (AW) is a material replacement for Dual Purpose Improved Conventional Munition (DPICM) warheads that are currently present in the M-26, the M-26A2, and M-30 (GMLRS DPICM) rockets. The GMLRS AW is being developed to reduce or eliminate the risks of Unexploded Ordnance (UXO) to a threshold level of less than one (1)percent (Objective zero (0) percent) in accordance with (IAW) recent Department of Defense (DoD) policy. It fills a Warfighting Capability Gap left by the future removal of current cluster munitions from the battlefield. In a memorandum dated 25 Jun 2008, the Office of the Deputy Chief of Staff, G-3/5/7 directed that an GMLRS DPICM AW program should be developed to satisfy the requirements stated in the 19 Jun 2008 DoD Policy on Cluster Munitions and Unintended Harm to Civilians memo. This memo called for less than 1% unexploded ordnance (UXO) after 2018. As a result, a Configuration Steering Board (CSB) was convened on 22 Oct 2008 to consider potential changes to the GMLRS DPICM program and address the concept refinement of GMLRS AW program. The outcome of the CSB was the signature of two Acquisition Decision Memorandums signed on 7 NOV 2008, which directed the cessation of U.S. Army DPICM production after FRP-III deliveries, and the development of a competitive procurement strategy for the GMLRS AW Program. The AW Program strategy will consist of a Technology Development phase and authorize the Army to release competitive request for proposals (RFP) leading to two or more competing contractors to provide technology solutions, demonstrating an alternative warhead for DPICM that satisfies the MLRS ORD, dated 14 Nov 2003. The GMLRS AW will be effective against the DPICM target set. This effort includes development, integration and test activities for the payload, dispense mechanism (if required), proximity sensor (if required), electronic safe and arm device/fuze, and associated flight software.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Conduct Development Engineering, Design Component Testing, and Performance Analysis			2277
Perform Technical Assessments and Concept Studies			3690
Prepare Milestone Documentation, Risk Reduction and Program Reviews			2229
Conduct System Test and Evaluation Activities			4005
Total			12201

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM	78G

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy The Guided Multiple Launch Rocket System (GMLRS) Alternative Warhead (AW) rocket will also be a product improved version of the current GMLRS Dual Purpose Improved Conventional Munitions (DPICM) rocket. As with the Unitary rocket, the GMLRS AW rocket will leverage technological opportunities from those demonstrated in the DPICM and Unitary development efforts as well as current efforts from other programs. The GMLRS Program strategy relative to design technology is to identify leading technologies, offerors, and hardware through an open competition between at least two potential warheads. An Request for Proposal (RFP) process will be used to solicit offerors, with the most mature, cost effective and capable choices chosen for further development. At the conclusion of the Technical Development (TD) Phase, the government will make a downselect to one technology to be fully developed and integrated during Engineering and Manufacturing Development (EMD) Phase.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM							78G		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
AWP Contracts	SS/CPFF	LMMFCS Dallas, TX						5494	1Q		5494	
Government Support	N/A	AMCOM/AMRDEC, RSA						1461	1-4Q		1461	
Subtotal:								6955			6955	

Remarks: AWP-Alternative Warhead Program; SS/CPFF-Sole Source/Cost Plus Fixed Fee; LMMFCS-Lockheed Martin Missile and Fire Control System; TX-Texas; AMCOM-Army Materiel Command;AMRDEC-U.S. Army Research, Development & Engineering Command; RSA-Redstone Arsenal, Alabama; N/A-Not Applicable

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	Camber Research/S3/TMI, Alabama						506	1-3Q		506	
Subtotal:								506			506	

Remarks: c/CPFF-Cost/Cost Plus Fixed Fee;S3-Systems Studies Simulation, Inc.;TMI-Tec Master, Inc.

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	N/A	WSMR,NM						1976	1-4Q		1976	
Subtotal:								1976			1976	

Remarks: WSMR,NM-White Sands Missile Range, New Mexico

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	N/A	PFRMS Proj Ofc, RSA						2764			2764	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT
7 - Operational system development	0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM						78G
Subtotal:						2764	2764
Remarks: PFRMS-Precision Fires Rocket and Missile Systems							
Project Total Cost:						12201	12201

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE												PROJECT																		
7 - Operational system development		0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM												78G																		
Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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	1	2	3	4
(1) System PDR									 PDR																							

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0603778A - MLRS PRODUCT IMPROVEMENT PROGRAM				PROJECT 78G	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
System PDR			3Q					