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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>					PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	64.609	143.005	110.576	-	110.576	90.607	102.974	69.876	107.489	Continuing	Continuing
090: <i>MLRS HIMARS</i>	-	5.945	3.158	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
093: <i>Multi-Launch Rocket System (MLRS)</i>	-	15.397	72.503	40.028	-	40.028	30.914	2.468	1.022	1.034	Continuing	Continuing
784: <i>Guided Mlrs</i>	-	2.469	10.295	15.317	-	15.317	21.515	9.086	7.000	6.900	Continuing	Continuing
78G: <i>Gmlrs Alternative Warheads</i>	-	40.798	57.049	53.973	-	53.973	33.898	18.319	0.000	0.000	Continuing	Continuing
DX8: <i>HIMARS Product Improvement Program</i>	-	0.000	0.000	1.258	-	1.258	4.280	4.101	3.318	3.310	Continuing	Continuing
DZ8: <i>GMLR Increment 4</i>	-	0.000	0.000	0.000	-	0.000	0.000	69.000	58.536	96.245	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Adjustments for FY14: Funding adjusted to reflect fact-of-life changes to planned FY14 activities.

A. Mission Description and Budget Item Justification

Projects 090/DX8. The M142 High Mobility Artillery Rocket System (HIMARS) is a full spectrum, combat proven, all weather, 24/7 lethal and responsive, precision strike weapon system that fully supports more deployable, affordable and lethal, Brigade Combat Teams (BCT), Fires Brigades, 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) engaging targets with precision out to ranges of 300 kilometers. HIMARS satisfies the Army's digitization requirements by interfacing with the Advanced Field Artillery Tactical Data System (AFATDS) fire support command and control system. The HIMARS product improvement program provides funding for research, development test, and integration efforts necessary for incorporation of advanced automotive, armor, armament, life cycle enhancements, system hardware and software technologies, including Common Operating Environment (COE) and Network Integrated Evaluation (NIE), obsolescence mitigation, reliability improvements and decreasing the logistics footprint. This effort includes performing technical assessments, concept studies, and risk reduction efforts for incorporation of future requirements. The HIMARS product improvement program maintains compliance with Intra-Army Interoperability and Digital Communications. HIMARS has been deployed to Operation Iraqi Freedom (OIF) and is still supporting Operation Enduring Freedom (OEF) with great success by both US Army and Marine Corps units.

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>
MLRS is a full spectrum, combat proven, all weather, 24/7 lethal and responsive, Precision Strike weapon system that is organic/assigned to Fires Brigades supporting BCT. The MLRS launcher provides critical missile precision strike, operational shaping fires, counterfire, and close support destructive and suppressive fires. The launcher is complimented by the MFOM to include the Guided Multiple Launch Rocket System (GMLRS), and the AFOM, capable of engaging targets up to a range of 300 kilometers (km). The MLRS product improvement program provides funding for research, development, test and integration efforts necessary for incorporation of advanced automotive, armament and system hardware and software technologies, including COE and NIE, obsolescence mitigation, reliability improvements, 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. GMLRS rockets are surface-to-surface artillery rockets fired from the MLRS and 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 consists of four separate increments: GMLRS Dual Purpose Improved Conventional Munition (DPICM) cluster munition to engage area or imprecisely located targets; GMLRS Unitary that utilizes a 200 lb high explosive warhead to engage point targets with limited collateral damage; and GMLRS Alternative Warhead (AW) that is being developed as a non-cluster munition to replace GMLRS DPICM. GMLRS DPICM Production was terminated in response to the June 2008 Department of Defense (DoD) Cluster Munitions Policy. GMLRS Unitary is currently in full rate production. GMLRS AW is currently in the Engineering and Manufacturing Development (EMD) Phase and scheduled to enter full rate production in FY15. The GMLRS AW rocket is 90% common with the Unitary variant. GMLRS Increment IV is being developed to replace expiring Army Tactical Missile System (ATACMS) missiles and ATACMS cluster munitions that are prohibited from use by the DoD Cluster Munitions Policy after 31 Dec 2018. It is intended to address the same targets with similar capabilities. The program is currently in the pre-Materiel Development Decision (MDD) Phase. The MDD is anticipated to occur in 1Q FY2014 with a tentative Milestone A scheduled for 1Q FY16. The United States (U.S.) Army funds GMLRS Research, Development, Test and Evaluation (RDT&E) activities from three program codes under the MLRS Product Improvement Program (0603778A) program element; 784-Guided MLRS includes common GMLRS RDT&E activities, 78G-GMLRS Alternative Warhead for GMLRS AW EMD activities, and DZ8-GMLRS Increment 4 for the Technology Demonstration (TD) activities.		

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE			
2040: Research, Development, Test & Evaluation, Army		PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM			
BA 7: Operational Systems Development					
B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	66.641	143.005	122.008	-	122.008
Current President's Budget	64.609	143.005	110.576	-	110.576
Total Adjustments	-2.032	0.000	-11.432	-	-11.432
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.032	-			
• Adjustments to Budget Years	-	-	-11.432	-	-11.432

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM				PROJECT 090: MLRS HIMARS			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
090: MLRS HIMARS	-	5.945	3.158	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
Funds realigned to new PE DX8 HIMARS Product Improvement Program.												
A. Mission Description and Budget Item Justification												
The M142 High Mobility Artillery Rocket System (HIMARS) is a full spectrum, combat proven, all weather, 24/7 lethal and responsive, precision strike weapon system that fully supports more deployable, affordable and lethal, Brigade Combat Teams, Fires Brigades, 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) engaging targets with precision out to ranges of 300 kilometers. HIMARS satisfies the Army's digitization requirements by interfacing with the Advanced Field Artillery Tactical Data System (AFATDS) fire support command and control system. The HIMARS product improvement program provides funding for research, development, test and integration efforts necessary for sustainment, obsolescence mitigation, reliability improvements, incorporation of advanced automotive, armor, armament and system hardware and software technologies including Contemporary Operating Environment (COE) and Network Integrated Evaluation (NIE) and decreasing the logistics footprint. This effort includes performing technical assessments, concept studies, and risk reduction efforts for incorporation of future requirements. The HIMARS product improvement program maintains compliance with intra-Army interoperability and digital communications. HIMARS has been deployed to Operation Iraqi Freedom (OIF) and is still supporting Operation Enduring Freedom (OEF) with great success by both US Army and Marine Corps units.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: MLRS Production Improvement Program-HIMARS									5.945	3.158	0.000	
									0	0		
Description: Improve system design and develop hardware and software integration with upcoming command and control initiatives to include the COE and the NIE. Perform technical assessments, concept studies, cost reduction, risk reduction, field issue resolution and required documentation concerning upgrades to enhanced command and control (C2), improved initialization, hardware and software obsolescence mitigation, tactical fire control, embedded training, launcher loader module electric drive, diagnostics/prognostics, alternate coupling, situational awareness, long range communication, automotive chassis life cycle enhancements and future munitions integration.												
FY 2012 Accomplishments:												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army								DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>			PROJECT 090: <i>MLRS HIMARS</i>		

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Executed development activities for additional improved crew protection against emerging threats and enhancements to communications and battle command. Continued effort to maintain Command, Control, Communications, Computers and Intelligence (C4I)/interoperability certification and network interoperability certification. Conducted technical assessments and concept studies in the areas of automotive chassis life cycle enhancements, hardware/software technologies and improved transportability options to support evolving mission requirements, technology insertion, and continued obsolescence mitigation. <i>FY 2013 Plans:</i> The focus of the FY2013 program is execution of enhancements to the fire control system and associated trainer updates as well as communications and battle command systems. Continued effort will be required to maintain C4I/interoperability certification and network interoperability certification. Continue technical assessments and concept studies in the areas of automotive chassis life cycle enhancements, hardware/software technologies and improved transportability to support evolving mission requirements, technology insertion planning and obsolescence mitigation. Improve system design and develop hardware and software integration with upcoming command and control initiatives to include the COE and the NIE.			
Accomplishments/Planned Programs Subtotals	5.945	3.158	0.000

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• C03000000: <i>HIMARS Launcher</i>	31.674	12.051								0.000	43.725
• C67501000: <i>HIMARS Modifications</i>	11.670	6.068	6.105		6.105	6.073	6.318	6.335	6.411	Continuing	Continuing
• CA028800: <i>Initial Spares, HIMARS</i>	0.937									0.000	0.937
• 0603778A-DX8: <i>HIMARS Product Improvement Program</i>			1.258		1.258	4.280	4.101	3.318	3.310	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
HIMARS follow-on horizontal technology insertion efforts include automotive chassis life cycle enhancements, increased crew protection, enhanced C2, improved initialization, long range communications, fire control system obsolescence mitigation and associated enhancements to training devices.											
E. Performance Metrics											
Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development						R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM				PROJECT 090: MLRS HIMARS					
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PFRMS Project Office:Redstone Arsenal, Alabama	9.271	0.199	Oct 2011	0.102	Oct 2012	-		-		-	0.000	9.572	0.000
Subtotal			9.271	0.199		0.102		0.000		0.000		0.000	0.000	9.572	0.000
Remarks PFRMS - Precision Fires Rocket and Missile Systems															
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Battle Command	SS/CPFF	CECOM, PEO STRI, AMRDEC, Techrizon, LMMFC:Various	15.741	4.888	Feb 2012	2.418	Feb 2013	-		-		-	0.000	23.047	0.000
Other Government Agencies (OGA)	Various	AMCOM, GSA, RSA:Various	17.565	0.337	Feb 2012	0.206	Feb 2013	-		-		-	0.000	18.108	0.000
Subtotal			33.306	5.225		2.624		0.000		0.000		0.000	0.000	41.155	0.000
Remarks SS - Sole Source; CPFF - Cost Plus Fixed Fee; CECOM - US Army Communications Electronics Command; PEO STRI - Program Executive Office for Simulation, Training and Instrumentation; AMRDEC - Aviation and Missile Research, Development and Engineering Center; LMMFC - Lockheed Martin Missiles and Fire Control; AMCOM - US Army Aviation & Missile Life Cycle Management Command; GSA - General Services Administration; RSA - Redstone Arsenal Alabama															
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	Camber Research, S3, TMI:Various	3.833	0.311	Feb 2012	0.158	Feb 2013	-		-		-	0.000	4.302	0.000
Subtotal			3.833	0.311		0.158		0.000		0.000		0.000	0.000	4.302	0.000

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>							R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>					PROJECT 090: <i>MLRS HIMARS</i>			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks C/CPFF - Competitive Cost-Plus Fixed-Fee, S3 - Systems, Studies, Simulation, Incorporated; TMI - Tec Masters, Incorporated															

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	Fort Hood TX, ATEC, APG MD, WSMR, RTC RSA.:Various	43.567	0.210	Feb 2012	0.274	Feb 2013	-		-		-	0.000	44.051	0.000
Subtotal			43.567	0.210		0.274		0.000		0.000		0.000	0.000	44.051	0.000
Remarks ATEC - US Army Test and Evaluation Command; APG MD - Aberdeen Proving Grounds, Maryland; WSMR - White Sands Missile Range; RTC RSA - Redstone Test Center, Redstone Arsenal, Alabama															

			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			89.977	5.945		3.158		0.000		0.000		0.000	0.000	99.080	0.000
Remarks															

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army									DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM				PROJECT 093: Multi-Launch Rocket System (MLRS)			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
093: Multi-Launch Rocket System (MLRS)	-	15.397	72.503	40.028	-	40.028	30.914	2.468	1.022	1.034	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
The Multiple Launch Rocket System (MLRS) is a full spectrum, combat proven, all weather, 24/7 lethal and responsive, Precision strike weapon system that is organic/assigned to Fires Brigades supporting Brigade Combat Teams. The MLRS launcher provides critical missile precision strike, operational shaping fires, counterfire, and close support destructive and suppressive fires. The launcher is complemented by the MLRS Family of Munitions (MFOM) to include the Guided Multiple Launch Rocket System (GMLRS), and the Army Tactical Missile System (ATACMS) Family of Munitions (AFOM), capable of engaging targets up to a range of 300 kilometers. The MLRS product improvement program provides funding for research, development, test, and integration efforts necessary for incorporation of advanced automotive armament, and system hardware and software technologies, including Common Operating Environment (COE) and Network Integrated Evaluation (NIE), obsolescence mitigation, reliability improvements, 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.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: MLRS Product Improvement Program									15.397	72.503	40.028	
									Articles: 0	0		
Description: The MLRS product improvement program ensures compliance as defined in the Department of Defense (DoD) Information Technology Standards. Funding is provided to several government agency laboratories each fiscal year in support of this program. Support efforts also include Enhanced Command and Control (C2), interoperability certifications, obsolescence mitigation, increased crew protection, automotive updates and hardware/software enhancements, and information assurance compliance. All efforts are directed toward preservation of platform viability and readiness to accept technology insertion as capability enhancements and obsolescence mitigations are developed.												
Perform Command, Control, Communications, Computers, and Intelligence (C4I)/interoperability certification tests, improve operational timeline, and conduct network Interoperability testing/certification. Perform technical assessments, concept studies, obsolescence mitigation, crew protection, automotive and hardware/software enhancements, and risk reduction.												
FY 2012 Accomplishments:												

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
Executed development activities to improve crew protection with a new cab and enhanced chassis blast protection that included design activities leading to formal Preliminary Design Review (PDR). Maintained C4I/interoperability certification and network interoperability certification. Conducted technical assessments and concept studies in the areas of automotive and hardware/software technologies to support evolving mission requirements, planned for technology insertion, and continued obsolescence mitigation. FY 2013 Plans: Continue execution of Improved Armored Cab (IAC) for crew protection effort through Critical Design Review (CDR). Initiate modification to fire control system to alleviate obsolescence issues, including PDR of modified design. Continue to maintain C4I/interoperability certification and network interoperability certification. Continue to conduct technical assessments and concept studies in the areas of automotive and hardware/software technologies to support evolving mission requirements, planning for technology insertion, and continued obsolescence mitigation. Improve system design and develop hardware and software integration with upcoming C2 initiatives to include the (COE) and the (NIE). FY 2014 Plans: Increase crew protection and Fire Control System Update(FCS-U). Continue execution of development and qualification of the IAC for crew protection and blast protection. Conduct CDR and continue development and begin qualification test activities for the Fire Control System - Update (FCS-U) effort to mitigate obsolescence. Additional activities include the continuation to maintain C4I/interoperability certification and network interoperability certification. Continue to improve system design and development hardware and software integration with upcoming C2 initiatives to include the COE and the NIE.			
Accomplishments/Planned Programs Subtotals		15.397	72.503
C. Other Program Funding Summary (\$ in Millions)			
Line Item	FY 2012	FY 2013	FY 2014 Base FY 2014 OCO FY 2014 Total
• C67500000: <i>MLRS Mods</i>	8.236	2.466	11.571
• CA0265000: <i>MLRS Mod Initial</i>	1.031	1.064	1.083
<i>Spares (CA0265)</i>			
Remarks			
D. Acquisition Strategy			
The MLRS product improvement program conducts concept studies to support obsolescence mitigation, automotive updates, and hardware/software enhancements. Development efforts underway include Enhanced C2 and efforts supporting interoperability certifications, information assurance compliance,increased crew protection IAC, and mitigating obsolescence of the Fire Control System through the FCS-U effort. The IAC effort, begun in FY 12, fulfills a M270A1 system requirement that			

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enhances the level of crew protection. A contract was awarded following a competitive bid process (full and open competition) to ensure best value for the government. The FCS-U is driven by the need to mitigate obsolete electronic components that are being sustained through life of type purchases. These purchased components will be exhausted, thus requiring an update to the design. This update to the design will preserve current capability of firing the complete set of MLRS family of munitions per the Operational Requirements Document (ORD). Obsolescence mitigation activities in FY12 included trade studies to determine the most appropriate architecture for the FCS-U. The FCS-U effort began in FY13, utilizing the industrial Engineering Services contract that was previously sole source awarded. Contract efforts includes finalizing design, testing, and qualification of the FCS-U with scheduled completion in FY15. PDR will occur in FY13 and CDR FY14. <u>E. Performance Metrics</u> Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>						R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>						PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>			
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PFRMS Proj Ofc, Redstone Arsenal, Alabama:Redstone Arsenal, Alabama	6.241	0.340	Dec 2011	1.143	Oct 2012	1.163	Oct 2013	-		1.163	Continuing	Continuing	Continuing
Subtotal			6.241	0.340		1.143		1.163		0.000		1.163			
Remarks PFRMS - Precision Fires Rocket and Missile Systems															
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Agencies OGA	MIPR	FT SILL OK, CECOM-NJ AMRDEC-RSA AL,:various	15.745	0.500	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
MLRS IAC	C/CPFF	Lockheed Martin:Grand Praire, TX	0.000	13.950	May 2012	12.689	Nov 2012	5.676	Nov 2013	-		5.676	Continuing	Continuing	Continuing
MLRS FCS Development	SS/CR	Lockheed Martin:Grand Praire, TX	0.000	-		54.571	Mar 2013	26.509	Feb 2014	-		26.509	Continuing	Continuing	Continuing
Subtotal			15.745	14.450		67.260		32.185		0.000		32.185			
Remarks C CPFF - Competitive Cost-Plus Fixed-Fee SS CR - Sole Source Cost AMRDEC - United States Army Aviation and Missile Research, Development, and Engineering Center RSA AL - Redstone Arsenal, Alabama Ft Sill OK - Oklahoma CECOM - United States Army Communication - Electronics Command MIPR - Military Interdepartmental Purchase Request LM - Lockheed Martin, Grand Praire, Texas															

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>						R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>						PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	Various	Multiple:Multiple	3.553	0.457	Dec 2011	-		0.130	Dec 2013	-		0.130	Continuing	Continuing	Continuing
Subtotal			3.553	0.457		0.000		0.130		0.000		0.130			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support, Joint Interoperability Test Certificate	MIPR	CTSF, Ft. Hood:Texas	2.237	0.150	Dec 2011	4.100	Dec 2012	6.550	Dec 2013	-		6.550	Continuing	Continuing	Continuing
Subtotal			2.237	0.150		4.100		6.550		0.000		6.550			
Remarks CTSF - Central Technical Support Facility MIPR - Military Interdepartmental Purchase Request															
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			27.776	15.397		72.503		40.028		0.000		40.028			
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army										DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>					PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>			

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Improved Armored Cab Development Award 3Q FY12; Testing 1-4Q FY14																												
Fire Control System Upgrade Production - Award 2Q FY15; 1st Del/install 2Q/FY16																												
Fire Control System Upgrade Development - Award 3Q FY13; Testing 1-4Q FY15																												
Improved Armored Cab Production - 1st Delivery/Install 2Q FY15																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Improved Armored Cab Development Award 3Q FY12; Testing 1-4Q FY14	3	2012	4	2014
Fire Control System Upgrade Production - Award 2Q FY15; 1st Del/install 2Q/FY16	3	2015	4	2017
Fire Control System Upgrade Development - Award 3Q FY13; Testing 1-4Q FY15	3	2013	2	2015
Improved Armored Cab Production - 1st Delivery/Install 2Q FY15	2	2015	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM				PROJECT 784: Guided Mlrs			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
784: Guided Mlrs	-	2.469	10.295	15.317	-	15.317	21.515	9.086	7.000	6.900	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
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) Unitary rockets and common components and to mitigate obsolescence issues under the 784-Guided MLRS project code. The Army is requesting funding for the following 784 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 and flight performance; (2) investigation of potential life cycle cost savings through obsolescence initiatives; (3) development of enhancements to the Multiple Launch Rocket System (MLRS) common test equipment; and (4) evaluation of potential technologies to enhance Insensitive Munitions (IM) compliance and survivability.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2012	FY 2013	FY 2014
Title: Assess and improve GMLRS rockets. Description: Funding is provided for the following effort FY 2012 Accomplishments: Assessed and improved GMLRS rockets. FY 2013 Plans: Continue to assess and improve GMLRS rockets. FY 2014 Plans: Continue to seek improvements in rocket reliability, collateral damage, and effectiveness.										1.452	1.549	2.165
										Articles: 0	0	
Title: Conduct development engineering for IM program. Description: Funding is provided for the following effort FY 2012 Accomplishments: Investigated IM improvements investigation. FY 2013 Plans:										0.381	7.792	8.841
										Articles: 0	0	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM			PROJECT 784: Guided Mlrs				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2012	FY 2013	FY 2014
Continue IM improvements investigation and procure items for initial test.												
FY 2014 Plans: Continue to procure test articles to qualify improvements to satisfy JCIDS requirements.												
Title: Investigate obsolescence/cost reduction opportunities/second source suppliers.										0.636	0.954	1.049
Articles:										0	0	
Description: Funding is provided for the following effort												
FY 2012 Accomplishments: Continued engineering development; performed integration of multi-mode fuzes and potential alternate warhead solutions while assessing the industry to mitigate obsolescence and investigate cost reductions through alternate sources of procurement.												
FY 2013 Plans: Continue the development engineering; performing integration of multi-mode fuzes and potential alternate warhead solutions while assessing the industry to mitigate obsolescence and investigate cost reductions through alternate sources of procurement.												
FY 2014 Plans: Continue to design and integrate enhanced operational capability and flexibility across the target set, as well as investigate obsolescence issues and cost reduction initiatives.												
Title: Conduct System Test and Evaluation activities.										0.000	0.000	3.262
Description: Funding is provided for the following effort:												
FY 2014 Plans: Conduct IM System testing.												
Accomplishments/Planned Programs Subtotals										2.469	10.295	15.317
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost	
• GMLRS: GMLRS	333.167	239.232	237.216		237.216	250.039	256.922	333.965	399.201	Continuing	Continuing	
• 78G: GMLRS Alternative Warhead	42.083	57.049	53.973		53.973	33.898	18.319			Continuing	Continuing	
• DZ8: GMLRS Increment 4							69.000	58.536	96.245	0.000	223.781	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>				PROJECT 784: <i>Guided Mlrs</i>			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Complete</u>	<u>Total Cost</u>
Remarks											
GMLRS Procurement funding includes C65404 and C65406.											
D. Acquisition Strategy											
Project 784 is intended to support, investigate, and develop 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 IM activities to improve the overall posture of the system all the way down to component level. Future initiatives could include a missile modernization program to extend the shelf life of the GMLRS rocket.											
E. Performance Metrics											
Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development						R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM						PROJECT 784: Guided Mlrs			
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	TBD	PFRMS Project Office,;RSA	27.696	-		-		0.128	Oct 2013	-		0.128	Continuing	Continuing	Continuing
Subtotal			27.696	0.000		0.000		0.128		0.000		0.128			
Remarks TBD-To Be Determined; Cont.-Continuing; PFRMS - Precision Fires Rocket and Missile Systems; RSA-Redstone Arsenal, Alabama															
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Unitary Contracts/Multiple	SS/CPFF	LMMFCS:Dallas, TX	276.027	2.435	Apr 2012	9.862	Dec 2012	14.859	Dec 2013	-		14.859	Continuing	Continuing	Continuing
Other Government Agencies	TBD	AMCOM/AMRDEC,;RSA	77.986	-		0.265	Dec 2012	-		-		-	Continuing	Continuing	Continuing
Subtotal			354.013	2.435		10.127		14.859		0.000		14.859			
Remarks SS/CPFF-Sole Source/Cost Plus Fixed Fee; Cont.-Continuing; LMMFCS - Lockheed Martin Missile and Fire Control System; TX - Texas; AMCOM-Aviation and Missile Command; TBD-To Be Determined; AMRDEC - U.S. Army Research, Development and Engineering Command; RSA - Redstone Arsenal, Alabama															
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	Camber Research/S3/TMI,;Alabama	20.684	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			20.684	0.000		0.000		0.000		0.000		0.000			
Remarks C/CPFF-Cost/Cost Plus Fixed Fee; Cont.-Continuing; S3-Systems Studies Simulation, Inc.; TMI-Tec Masters, Inc.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>						R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>				PROJECT 784: <i>Guided Mlrs</i>				

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	TBD	WSMR,:NM	107.957	0.034	Dec 2011	0.168	Dec 2012	0.330	Dec 2013	-		0.330	Continuing	Continuing	Continuing
Subtotal			107.957	0.034		0.168		0.330		0.000		0.330			

Remarks
TBD-To Be Determined; Cont.-Continuing; WSMR, NM - White Sands Missile Range, New Mexico

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	510.350	2.469	10.295	15.317	0.000	15.317			

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army									DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM				PROJECT 78G: Gmlrs Alternative Warheads			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
78G: Gmlrs Alternative Warheads	-	40.798	57.049	53.973	-	53.973	33.898	18.319	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note Not applicable at this time.												
A. Mission Description and Budget Item Justification The United States (U.S.) Army is funding the development of the Guided Multitple Launch Rocket System (GMLRS) Alternative Warhead (AW) increment under the 78G-GMLRS AW project code. GMLRS AW is being developed as a non-cluster munition to replace GMLRS Dual Purpose Improved Conventional Munitions (DPICM) and service the same area and imprecisely-located targets. GMLRS DPICM Production was terminated in response to the June 2008 Department of Defense (DoD) Cluster Munitions Policy. The GMLRS AW increment completed Milestone B (MS B) on February 19, 2012 and is currently in the Engineering and Manufacturing Development (EMD) Phase. The three-year EMD contract was awarded on March 30, 2012. Funding is requested in FY2013 for the second year of the EMD contract and for other government and contracted EMD activities to include engineering developmental testing and the Critical Design Review (CDR). GMLRS AW is scheduled for a combined Milestone C (MS C) and Full Rate Production (FRP) Decision in FY2015 and Initial Operational Capability (IOC) in FY2016.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: Conduct Development Engineering, Design Component Testing, and Performance Analysis. Articles: Description: Funding is provided for the following effort FY 2012 Accomplishments: Conducted design optimization and analysis, System Readiness Review (SRR) and Initial Design Review (IDR) in EMD Phase. FY 2013 Plans: Continue design optimization and analysis, Critical Design Review (CDR) in EMD Phase, procure test articles and conduct engineering testing. FY 2014 Plans:									20.302	26.519	25.090	
									0	0		

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM	PROJECT 78G: Gmlrs Alternative Warheads		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Perform design optimization trade studies, qualification of manufacturing procedures, conduct Development Test/Operational testing.				
Title: Perform technical assessments and concept studies. Description: Funding is provided for the following effort FY 2012 Accomplishments: Evaluated SRR and IDR in EMD. FY 2013 Plans: Evaluate CDR. FY 2014 Plans: Perform system integration trade studies, assessment of Manufacturing Readiness Levels (MRL).		Articles: 6.214 0	14.271 0	13.500
Title: Prepare Milestone Documentation, Risk Reduction, and Program Reviews. Description: Funding is provided for the following effort FY 2012 Accomplishments: Evaluated SRR. FY 2013 Plans: IDR and CDR support. FY 2014 Plans: Assess EMD testing.		Articles: 1.657 0	2.486 0	2.353
Title: Conduct System Test and Evaluation Activities. Description: Funding is provided for the following effort FY 2012 Accomplishments: Performed test planning in support of MS C. FY 2013 Plans:		Articles: 12.625 0	13.773 0	13.030

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 78G: <i>Gmlrs Alternative Warheads</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
Engineering Development Testing (EDT). FY 2014 Plans: Engineering Production Qualification Testing (PQT) , Development Test/Operational Test (DT/OT), ground testing, and system Insensitive Munitions (IM) testing.			
Accomplishments/Planned Programs Subtotals		40.798	57.049
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks Not applicable for this item.			
D. Acquisition Strategy The GMLRS AW rocket is a product improved version of the current GMLRS DPICM rocket. During EMD, GMLRS AW will undergo further development, integration, and testing under a Firm Fixed Price (FFP) contract.			
E. Performance Metrics Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>						R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>						PROJECT 78G: <i>Gmlrs Alternative Warheads</i>			
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	TBD	PFRMS Project Office,:RSA	1.724	5.025	Oct 2011	3.265	Oct 2012	5.779	Oct 2013	-		5.779	Continuing	Continuing	Continuing
Subtotal			1.724	5.025		3.265		5.779		0.000		5.779			
Remarks TBD-To Be Determined; Cont.-Continuing; PFRMS-Precision Fires Rocket and Missile Systems; RSA-Redstone Arsenal, Alabama															
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AWP Contracts (Multiple)	Various	ATK (Plymouth, MN):LMMFCS (Dallas, TX), Systems Integrator	3.784	28.742	Apr 2012	35.088	Dec 2012	30.697	Dec 2013	-		30.697	Continuing	Continuing	Continuing
Other Government Agencies	TBD	AMCOM/AMRDEC,:RSA	10.767	3.399	Dec 2011	5.939	Dec 2012	3.678	Dec 2013	-		3.678	Continuing	Continuing	Continuing
Subtotal			14.551	32.141		41.027		34.375		0.000		34.375			
Remarks AWP-Alternative Warhead Program; Various-Competitive/Firm Fixed Price/Sole Source/Cost Plus Fixed Fee; TBD-To Be Determined; Cont.-Continuing; AMCOM-Army Materiel Command; AMRDEC-U.S. Army Research, Development and Engineering Command; RSA-Redstone Arsenal, Alabama; ATK-Alliant Techsystems, Inc.; MN-Minnesota; LMMFCS-Lockheed Martin Missile and Fire Control System; TX-Texas															
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	Camber Research/ S3/TMI,:Alabama	0.323	0.223	Dec 2011	0.227	Dec 2012	0.231	Dec 2013	-		0.231	Continuing	Continuing	Continuing
Subtotal			0.323	0.223		0.227		0.231		0.000		0.231			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army													DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>							R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>					PROJECT 78G: <i>Gmlrs Alternative Warheads</i>			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks C/CPFF-Competitive/Cost Plus Fixed Fee; Cont.-Continuing; S3-Systems Studies Simulation, Inc.; TMI-Tec Master, Inc.															
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	TBD	WSMR,:NM	7.390	3.409	Dec 2011	12.530	Dec 2012	13.588	Dec 2013	-		13.588	Continuing	Continuing	0.000
Subtotal			7.390	3.409		12.530		13.588		0.000		13.588			0.000
Remarks TBD-To Be Determined; Cont.-Continuing; WSMR,NM-White Sands Missile Range, New Mexico															
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			23.988	40.798		57.049		53.973		0.000		53.973			
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army												DATE: April 2013					
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development								R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM						PROJECT 78G: Gmlrs Alternative Warheads			

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Milestone B																												
Engineering Development Testing (EDT)																												
Critical Design Review (CDR)																												
Production Qualification Testing (PQT)																												
Milestone C																												
Initial Operational Test (IOT)																												
Full Rate Production (FRP)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 78G: <i>Gmlrs Alternative Warheads</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B	2	2012	2	2012
Engineering Development Testing (EDT)	2	2013	4	2013
Critical Design Review (CDR)	4	2013	4	2013
Production Qualification Testing (PQT)	4	2013	3	2014
Milestone C	3	2015	3	2015
Initial Operational Test (IOT)	1	2015	1	2015
Full Rate Production (FRP)	3	2015	3	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army									DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM				PROJECT DX8: HIMARS Product Improvement Program			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DX8: HIMARS Product Improvement Program	-	0.000	0.000	1.258	-	1.258	4.280	4.101	3.318	3.310	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
Project DX8 HIMARS Product Improvement Program previously funded on Project 090 MLRS HIMARS.												
A. Mission Description and Budget Item Justification												
The M142 High Mobility Artillery Rocket System (HIMARS) is a full spectrum, combat proven, all weather, 24/7 lethal and responsive, precision strike weapon system that fully supports more deployable, affordable and lethal, Brigade Combat Teams, Fires Brigades, 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) engaging targets with precision out to ranges of 300 kilometers. HIMARS satisfies the Army's digitization requirements by interfacing with the Advanced Field Artillery Tactical Data System (AFATDS) fire support command and control system. The HIMARS product improvement program provides funding for research, development, test and integration efforts necessary for incorporation of advanced automotive, armor, armament, life cycle enhancements, system hardware and software technologies, including Common Operating Environment (COE) and Network Integrated Evaluation (NIE), obsolescence mitigation, reliability improvements, and decreasing the logistics footprint. This effort includes performing technical assessments, concept studies, and risk reduction efforts for incorporation of future requirements. The HIMARS product improvement program maintains compliance with intra-army interoperability and digital communications. HIMARS has been deployed to Operation Iraqi Freedom (OIF) and is still supporting Operation Enduring Freedom (OEF) with great success by both US Army and Marine Corps units.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014	
Title: MLRS Production Improvement Program (PIP)-HIMARS PIP									0.000	0.000	1.258	
Description: Improve system design and develop hardware and software integration with upcoming command and control initiatives to include the COE and the NIE. Perform technical assessments, concept studies, cost reduction, risk reduction, field issue resolution and required documentation concerning upgrades to enhanced command and control (C2), improved initialization, hardware and software obsolescence mitigation, tactical fire control, embedded training, launcher loader module electric drive, diagnostics/prognostics, alternate coupling, situational awareness, long range communication, automotive chassis life cycle enhancements and future munitions integration.												
FY 2014 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0603778A: MLRS PRODUCT IMPROVEMENT PROGRAM				PROJECT DX8: HIMARS Product Improvement Program				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2012	FY 2013	FY 2014
The focus of the FY2014 program is continued obsolescence mitigation through initial integration execution to the COE and the continuance of developing enhancements to the fire control system. This will mitigate hardware and software obsolescence through associated trainer updates and integration to new or improved battle command systems. Technical assessments and concept studies in the areas of automotive chassis life cycle enhancements, hardware/software technologies and improved transportability will be conducted to support evolving mission requirements and improve vehicle reliability. Improve system design and develop hardware and software integration with upcoming command and control initiatives to the COE and the NIE to include Command, Control, Communications, Computers and Intelligence (C4I)/interoperability certification and network interoperability certification actions.												
Accomplishments/Planned Programs Subtotals										0.000	0.000	1.258
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost	
• C03000000: HIMARS Launcher	31.674	12.051								0.000	43.725	
• C67501000: HIMARS Modifications	11.670	6.068	6.105		6.105	6.073	6.318	6.335	6.411	Continuing	Continuing	
• CA028800: Initial Spares, HIMARS	0.937									0.000	0.937	
• 0603778A-090: MLRS HIMARS	5.945									0.000	5.945	
Remarks												
D. Acquisition Strategy												
The HIMARS product improvement program conducts concept studies to support obsolescence mitigation, automotive updates, and hardware/software enhancements. Development efforts underway include Enhanced C2 and efforts supporting interoperability certifications, information assurance compliance, and mitigating obsolescence of the fire control system through the integration of the FCS-U effort on the M142 HIMARS. The FCS-U is driven by the need to mitigate obsolete electronic components that are being sustained through life of type purchases. These purchased components will be exhausted, thus requiring an update to the design. This update to the design will preserve current capability of firing the complete set of MFOM per the Operational Requirements Document (ORD). Obsolescence mitigation activities in FY14 include trade studies to determine the most appropriate architecture for the FCS-U. The FCS-U effort which began in FY13 for the M270A1 system, will be integrated on the HIMARS system starting in FY15. Contract efforts include integration, testing, and qualification of the FCS-U with scheduled completion in FY16. Preliminary Design Review (PDR) and Critical Design Review (CDR) will occur in FY15 with qualified design in FY16. HIMARS follow-on technology insertion efforts include automotive chassis life cycle enhancements, fire control system obsolescence mitigation and associated enhancements to training devices as improvements when applicable.												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT DX8: <i>HIMARS Product Improvement Program</i>

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>						R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>						PROJECT DX8: <i>HIMARS Product Improvement Program</i>			
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	C/Various	PFRMS Project Office, Redstone Arsenal, Alabama:Various	0.000	-		-		0.051		-		0.051	0.000	0.051	0.000
Subtotal			0.000	0.000		0.000		0.051		0.000		0.051	0.000	0.051	0.000
Remarks PFRMS - Precision Fires Rocket and Missile System															
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Agencies (OGA)	C/Various	AMCOM, GSA, RSA:Various	0.000	-		-		0.075		-		0.075	0.000	0.075	0.000
Battle Command	SS/CPFF	CECOM, PEO STRI, AMRDEC, Techizon, LMMFC Various:Various	0.000	-		-		0.956	Feb 2014	-		0.956	0.000	0.956	0.000
Subtotal			0.000	0.000		0.000		1.031		0.000		1.031	0.000	1.031	0.000
Remarks SS - Sole Source; CPFF - Cost Plus Fixed Fee; CECOM - US Army Communications Electronics Command; PEO STRI - Program Executive Office for Simulation, Training and Instrumentation; AMRDEC - Aviation and Missile Research, Development and Engineering Center; LMMFC - Lockheed Martin Missiles and Fire Control; AMCOM - US Army Aviation & Missile Life Cycle Management Command; GSA - General Services Administration; RSA - Redstone Arsenal Alabama															
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/Various	Camber Research, S3, TMI:Various	0.000	-		-		0.063		-		0.063	0.000	0.063	0.000
Subtotal			0.000	0.000		0.000		0.063		0.000		0.063	0.000	0.063	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army													DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>							R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>				PROJECT DX8: <i>HIMARS Product Improvement Program</i>				

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks C/CPFF - Competitive Cost-Plus Fixed-Fee, S3 - Systems, Studies, Simulation, Incorporated; TMI - Tec Masters, Incorporated																	

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	C/Various	Ft Hood, TX, ATEC, APG, MD, WSMR, RTC, RSA:Various	0.000	-		-		0.113		-		0.113		0.000	0.000	0.113	0.000
Subtotal			0.000	0.000		0.000		0.113		0.000		0.113		0.000	0.000	0.113	0.000
Remarks ATEC - US Army Test and Evaluation Command; APG MD - Aberdeen Proving Grounds, Maryland; WSMR - White Sands Missile Range; RTC RSA - Redstone Test Center, Redstone Arsenal, Alabama																	

	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		1.258		0.000		1.258	0.000	1.258	0.000
Remarks													

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>				PROJECT DZ8: <i>GMLR Increment 4</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DZ8: <i>GMLR Increment 4</i>	-	0.000	0.000	0.000	-	0.000	0.000	69.000	58.536	96.245	Continuing	Continuing
Quantity of RDT&E Articles												
[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012 ^{##} The FY 2014 OCO Request will be submitted at a later date A. Mission Description and Budget Item Justification The United States Army is funding the development of the Guided Multiple Launch Rocket System (GMLRS) Increment IV under the DZ8-GMLRS Increment IV project code. GMLRS Increment IV is being developed as a non-cluster munition to provide Joint Force Command with a 24/7 all weather 250 kilometer long-range fires capability to attack high-payoffs, time-sensitive targets without placing aircraft and crews at risk. The GMLRS Increment IV currently has a Material Development Decision (MDD) scheduled for 1QFY14 with a tentative Milestone (MS) A scheduled for 1QFY16. Funding is being requested for in FY2016 to award Technology Demonstration Phase contracts. GMLRS Increment IV will be developed via full and open competition carrying two or more contractors through the TD Phase. GMLRS Increment IV is scheduled for a Milestone B in FY2018 and Milestone C in FY2021. B. Accomplishments/Planned Programs (\$ in Millions) N/A C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A E. Performance Metrics Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>						R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>				PROJECT DZ8: <i>GMLR Increment 4</i>				

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NA	Various	NA:NA	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000			

	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		0.000		0.000		0.000			

Remarks