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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604851F: Intercontinental Ballistic Missile - EMD							
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	-	129.728	135.437	145.442	-	145.442	88.651	1.363	1.707	1.737	Continuing	Continuing
655037: Support Equipment	-	62.068	95.393	97.544	-	97.544	66.251	1.363	1.707	1.737	Continuing	Continuing
655081: ICBM Crypto	-	27.943	32.044	47.898	-	47.898	22.400	0.000	0.000	0.000	Continuing	Continuing
657006: ICBM EMD: Fuze Support	-	39.717	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
657010: Operational Equipment	-	0.000	8.000	0.000	-	0.000	0.000	0.000	0.000	0.000	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												
In FY 2012, 657006, ICBM EMD: Fuze Support, efforts were transferred from PE 0604222F, Nuclear Weapons Support, 654236, Engineering Analysis, in order to consolidate ICBM fuze related activities as they progress towards deployable products.												
In FY 2013, Project Number 657006, ICBM EMD: Fuze Support, efforts were transferred to PE 0604933F, ICBM Fuze Modernization, 655082, ICBM Fuze Support, in order to distinguish the effort as a pre-ACAT I program.												
In FY 2014, Project Number 655037, Support Equipment, includes the new start efforts for the Instrumentation Wafer Replacement Program (IWRP) and the Signal Conditioner Monitor Group (SCMG) replacement.												
A. Mission Description and Budget Item Justification												
Intercontinental Ballistic Missile (ICBM) Engineering and Manufacturing Development (EMD) efforts will ensure the extension of the operational life of the Minuteman III ICBM weapon system through 2030.												
The Support Equipment program designs, develops, and tests replacement of obsolete/non-serviceable weapon system support and flight test equipment. The efforts include design, development, and testing of support equipment such as Electrical-Electronic Equipment Test Sets (EEETS), Reentry Field Support Equipment (RFSE), Code System Media (CSM), Payload Transporter Replacement (PTR), Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) Message Generator, Single Integrated Operation Plan (SIOP) Targeting Application Computer System (STACS), and Transporter Erector Replacement Program (TERP). Efforts also include design, development, and testing of replacement flight test equipment such as the Instrumentation Wafer Replacement Program (IWRP) and the Signal Conditioner Monitor Group (SCMG) replacement.												

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APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 5: *System Development & Demonstration (SDD)*

R-1 ITEM NOMENCLATURE

PE 0604851F: *Intercontinental Ballistic Missile - EMD*

The ICBM Cryptography Upgrade Increment II (ICU II) program expands on the ICBM Cryptography Upgrade Increment I program to incorporate remote key/code change, irreversible transformation of launch/enable codes, and continuous signal lockout, increasing nuclear weapons security during annual code change cycles and preventing the loss of missile status monitoring.

ICBM EMD: Fuze Support reflects FY 2012 efforts related to fuze modernization efforts previously included in PE 0604222F and now included in PE 0604933.

The Operational Equipment program designs, develops, and tests replacement of weapon system equipment. The effort includes the Solid Rocket Motor (SRM) Modernization effort to define operational requirements, investigate available technologies and prepare an acquisition strategy for SRM development. This effort, coupled with the Propulsion Application Program under PE 0603851F, ICBM Demonstration/Validation, will support development of requirements and implementation timeline for a follow-on SRM program.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	148.307	135.437	130.417	-	130.417
Current President's Budget	129.728	135.437	145.442	-	145.442
Total Adjustments	-18.579	0.000	15.025	-	15.025
• Congressional General Reductions	-	0.000			
• Congressional Directed Reductions	-	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	-	0.000			
• Congressional Directed Transfers	-	0.000			
• Reprogrammings	-14.222	0.000			
• SBIR/STTR Transfer	-4.357	0.000			
• Other Adjustments	0.000	0.000	15.025	-	15.025

Change Summary Explanation

FY 2012 funding reflects a decrease of \$14.222M due to higher AF priorities and a decrease of \$4.357M due to a SBIR Transfer.

FY 2014 funding reflects an increase of \$12.920M for RFSE, an increase of \$2.500M for the HAC/RMPE Message Generator, and a decrease of \$0.395M for program efficiencies.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force									DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604851F: Intercontinental Ballistic Missile - EMD				PROJECT 655037: Support Equipment			
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
655037: Support Equipment	-	62.068	95.393	97.544	-	97.544	66.251	1.363	1.707	1.737	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# 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												
For FY 2014, 655037, Support Equipment, includes new start efforts for the Instrumentation Wafer Replacement Program (IWRP) and the Signal Conditioner Monitor Group (SCMG) replacement.												
A. Mission Description and Budget Item Justification												
The ongoing Support Equipment program replaces obsolete/unsupportable/non-serviceable weapon system support and test equipment necessary to extend the operational life of the Minuteman III weapon system through 2030. The efforts include design, development, and testing of replacement support equipment such as the Electrical-Electronic Equipment Test Sets (EEETS), Reentry Field Support Equipment (RFSE), Minuteman Code System Media (CSM), Payload Transporter Replacement (PTR), Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) Message Generator, Single Integrated Operation Plan (SIOP) Targeting Application Computer System (STACS) and Transporter Erector Replacement Program (TERP).												
It also includes the design, development, and testing of replacement flight test equipment necessary to conduct Force Development Evaluations (FDEs) and ICBM Fuze Modernization flight tests such as the Instrumentation Wafer Replacement Program (IWRP) and the Signal Conditioner Monitor Group (SCMG) replacement program. FDEs are required by USSTRATCOM and the Department of Energy to determine continuing reliability and effectiveness of the ICBM weapon system.												
BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014	
Title: Electrical-Electronic Equipment Test Set (EEETS)									4.775	3.737	0.000	
Description: Design and develop the EEETS used for production and pre-launch checkout of Mod 7 Instrumentation Wafer required to conduct flight tests and Force Development Evaluations. The Mod 7 Instrumentation Wafer provides transmission of missile telemetry and receipt of command destruct messages during flight. The program will replace the current unsupportable test set which consists of a non-standard processor, proprietary software, and requires Digital-to-Analog Converter cards no longer available (no suitable substitute).												
FY 2012 Accomplishments:												

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>	PROJECT 655037: <i>Support Equipment</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Designed, developed, fabricated and tested EEETS components. Conducted a successful Critical Design Review (CDR) and received all hardware necessary for assembly. FY 2013 Plans: Complete design, development, fabrication and testing of EEETS. Install, test, audit and verify units at flight test and contractor repair facilities.				
Title: Reentry Field Support Equipment (RFSE) Description: Design and develop the RFSE to replace the current reentry systems test set. RFSE will increase the mean time between failure, eliminate unneeded Mk12 functions, and add new Mk21 functions. It will provide capability to meet Department of Energy mandated Limited Life Component warhead swaps and to test electrical continuity during buildup of Minuteman III reentry systems. FY 2012 Accomplishments: Designed, developed, fabricated and tested RFSE components. Continued Independent Verification & Validation (IV&V) activities. Conducted a successful CDR. FY 2013 Plans: Continue design, development, fabrication and testing of RFSE units. Continue IV&V activities and hold Test Readiness Review (TRR). FY 2014 Plans: Continue design, development, fabrication and testing of RFSE units. Conduct configuration audits and a successful Milestone C briefing. Continue IV&V activities.		40.937	32.685	28.753
Title: Code System Media (CSM) Description: The CSM program supports the replacement of obsolete tape cartridges with more modern and available magnetic media. Segment #1, responsible for providing software to accept NSA codes, OPLAN changes and software updates on compact disk (CD), has been completed. Segment #2 will provide software and hardware necessary to import all other data on CD and produce Wing Codes Processing System products on CD. Segment #2 will also replace the Cartridge Transfer Unit (CTU) with the Data Transfer Unit (DTU). CSM effectively supports the replacement of aging media required to transport and handle mission essential codes and data throughout the ICBM weapon system. The shelf life of the current stock of DC300 tape cartridges and 9-track tapes expires in 2015. CSM delivers the capability to load codes/software on Minuteman III ICBMs through 2030 and is critical to code change activities. FY 2012 Accomplishments:		9.364	15.824	7.393

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014	
Continued design, development, and testing of CSM software. Completed and deployed Segment #1. Conducted a successful Segment #2 CDR. Continued Nuclear Safety Cross Check Analysis (NSCCA) activities. Began design, development and testing of the DTU. FY 2013 Plans: Continue design, development, and testing of CSM software. Conduct Segment #2 Test Readiness Review (TRR). Continue NSCCA activities. Continue design, development and testing of the DTU. FY 2014 Plans: Continue design, development, and testing of CSM software. Conduct Segment #2 configuration audits. Continue NSCCA activities. Continue design, development and testing of CTU replacement. Receive deployment authorization for Segment #2. Conduct a successful Milestone C briefing.					
Title: Payload Transporter Replacement (PTR) Description: Designs and develops the capabilities necessary to replace the current Payload Transporter (PT) tractor and trailer, mitigating emerging threat technologies and methods. The PT emplaces, extracts, and transports the Minuteman III Reentry System (RS), Propulsion System Rocket Engine (PSRE), and Missile Guidance Set (MGS). The new PT design increases safety and security during transport activities and improves maintenance operations. This effort was previously known as the Payload Transporter Tractor and Trailer (PT III). The name was changed to differentiate it from the currently fielded PT III trailer. FY 2012 Accomplishments: Conducted a successful Milestone B briefing and awarded the Engineering & Manufacturing Development (EMD) contract. Began design and development activities. FY 2013 Plans: Continue design, development, fabrication and testing of PTR. Conduct a successful System Functional Review (SFR) and Preliminary Design Review (PDR). FY 2014 Plans: Continue design, development, fabrication and testing of PTR. Conduct a successful Critical Design Review (CDR).		2.754	15.984	20.866	
Title: Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) Message Generator Description: Designs and develops the replacement for the Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) Message Generator due to obsolescence and unsupportability for repair. The Message Generator is required to test and maintain the HAC/RMPE capability to receive, process and handle command and emergency action messages for		2.100	2.522	0.935	

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B. Accomplishments/Planned Programs (\$ in Millions)				FY 2012	FY 2013	FY 2014
Minuteman III command and control. This program will replace the test support equipment with a modern, sustainable common platform and standard interfaces.						
FY 2012 Accomplishments: Designed, developed, fabricated, and tested HAC/RMPE Message Generator. Conducted a successful PDR.						
FY 2013 Plans: Conduct a successful CDR. Complete developmental testing and configuration audits.						
FY 2014 Plans: Complete design, development, fabrication and testing of HAC/RMPE Message Generator.						
Title: Single Integrated Operational Plan (SIOP) Targeting Applications Computer System (STACS) Description: Design and develop a replacement for the STACS hardware, software and tape cartridge media which are becoming obsolete and unsupportable. STACS will provide new targeting computer equipment and software, and CD media for data import and export. STACS enables USSTRATCOM required Operations Plan (OPLAN) changes and updates to ICBM missile wings for execution.				0.622	4.670	4.678
FY 2012 Accomplishments: Awarded EMD contract. Began design and development activities.						
FY 2013 Plans: Continue design and development activities. Conduct a successful Systems Requirements Review and technical interchange meetings.						
FY 2014 Plans: Continue design and development activities. Conduct a successful PDR and CDR.						
Title: Transporter Erector Replacement Program (TERP) Description: Design and develop the capabilities necessary to replace the current transporter erector (TE). The TE is used to emplace, extract and transport Minuteman III boosters to and from the launch facilities. TERP will update existing drawings, specifications and technical orders to eliminate parts obsolescence and address intended usage through 2030 and will qualify the new system prior to production.				0.000	13.691	26.290
FY 2013 Plans: Begin design, development, fabrication and testing of replacement TE. Award the EMD contract and conduct a successful PDR.						
FY 2014 Plans:						

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Continue design, development, fabrication and testing of replacement TE. Conduct a successful CDR and First Article Build. Initiate system qualification testing.				
Title: Instrumentation Wafer Replacement Program (IWRP) Description: Design and develop replacement for the Mod 7 Instrumentation Wafer. The instrumentation wafer transmits missile performance telemetry and position data and receives command destruct messages during missile flight tests and evaluations. The IWRP will directly support FDE and developmental flight tests from Vandenberg AFB and is necessary in order to conduct test flights. The IWRP will maximize the use of off-the-shelf components to meet mission requirements. This is an FY14 New Start. FY 2014 Plans: Begin design, development, fabrication and test of the replacement wafer, determine specific Commercial Off-the-Shelf components and begin review of all Range Safety requirements.		0.000	0.000	1.123
Title: Signal Conditioner Monitor Group (SCMG) Replacement Description: Design and develop replacements for the Signal Conditioner Monitor (SCM), Missile Discrete Monitor (MDM) and associated cabling required to capture RS performance data during FDE and developmental flight tests. The Signal Conditioner Monitor Group (SCMG) provides telemetry data on the RS and monitors RS discrete signals for post flight analysis. This is an FY14 New Start. FY 2014 Plans: Begin design, development, fabrication and test of SCMG replacement components.		0.000	0.000	1.216
Title: Program Management Administration Description: Direct unique program cost required for program management and oversight. FY 2012 Accomplishments: Program support, travel, printing, supplies, Advisory and Assistance Service. FY 2013 Plans: Program support, travel, printing, supplies, Advisory and Assistance Service. FY 2014 Plans: Program support, travel, printing, supplies, Advisory and Assistance Service.		1.516	6.280	6.290
Accomplishments/Planned Programs Subtotals		62.068	95.393	97.544

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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>
• MPAF: BA05: Line Item # 00099L: <i>Missile Replacement Equipment - Ballistic</i>	65.874	56.657	39.104		39.104	116.258	87.766	59.253	60.320	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Support and test equipment replacement efforts are reviewed to determine the best method for execution including vendor qualification and procurement with no development required, develop and/or modification with organic depot capabilities or development with industry. Industry development efforts started before FY13 are predominately executed through the ICBM Prime Integration Contract (IPIC) using Cost Plus Incentive Fee (CPIF) contract addendums. Industry development efforts starting in FY13 will be executed through contracts available under the Future ICBM Acquisition and Sustainment Contstruct (FISAC) or competitive source selections. NSCCA and IV&V efforts are contracted separately under a Cost Plus Award Fee (CPAF) Contract.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>						R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>						PROJECT 655037: <i>Support Equipment</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
ICBM Prime Integration Contract	SS/CPIF	Northrop Grumman Mission Systems:Clearfield, UT	-	58.110	Oct 2011	74.519	Oct 2012	55.227	Nov 2013	-		55.227	Continuing	Continuing	TBD
TERP EMD	C/CPAF	TBD:,	-	0.000		12.062	Jun 2013	31.139	Dec 2013	-		31.139	Continuing	Continuing	
Subtotal			0.000	58.110		86.581		86.366		0.000		86.366			
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
Nuclear Surety Cross-Check Analysis	SS/CPAF	Northrop Grumman IT:Mclean, VA	-	1.676	Oct 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD
Cost Estimation	C/CPFF	Tecolote:Salt Lake City, UT	-	0.000		0.300	Dec 2012	0.500	Dec 2013	-		0.500	Continuing	Continuing	
Advisory and Assistance Support	Various	Various:,	-	0.000		0.300	Nov 2012	1.750	Dec 2013	-		1.750	Continuing	Continuing	
Subtotal			0.000	1.676		0.600		2.250		0.000		2.250			
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
Independent Validation and Verification	SS/CPAF	Northrop Grumman IT:Mclean, VA	-	0.766	Oct 2011	1.932	Nov 2012	2.638	Dec 2013	-		2.638	Continuing	Continuing	TBD
Subtotal			0.000	0.766		1.932		2.638		0.000		2.638			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
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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
PMA - Contractor Support	Various	Various:,	-	0.525	Oct 2011	3.879	Nov 2012	3.979	Nov 2013	-		3.979		Continuing	Continuing	TBD
PMA - Government Costs	Various	ICBM Program Office:Hill AFB, UT	-	0.991	Oct 2011	2.401	Oct 2012	2.311	Nov 2013	-		2.311		Continuing	Continuing	TBD
Subtotal			0.000	1.516		6.280		6.290		0.000		6.290				

	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	62.068	95.393	97.544	0.000	97.544			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 5: System Development & Demonstration (SDD)

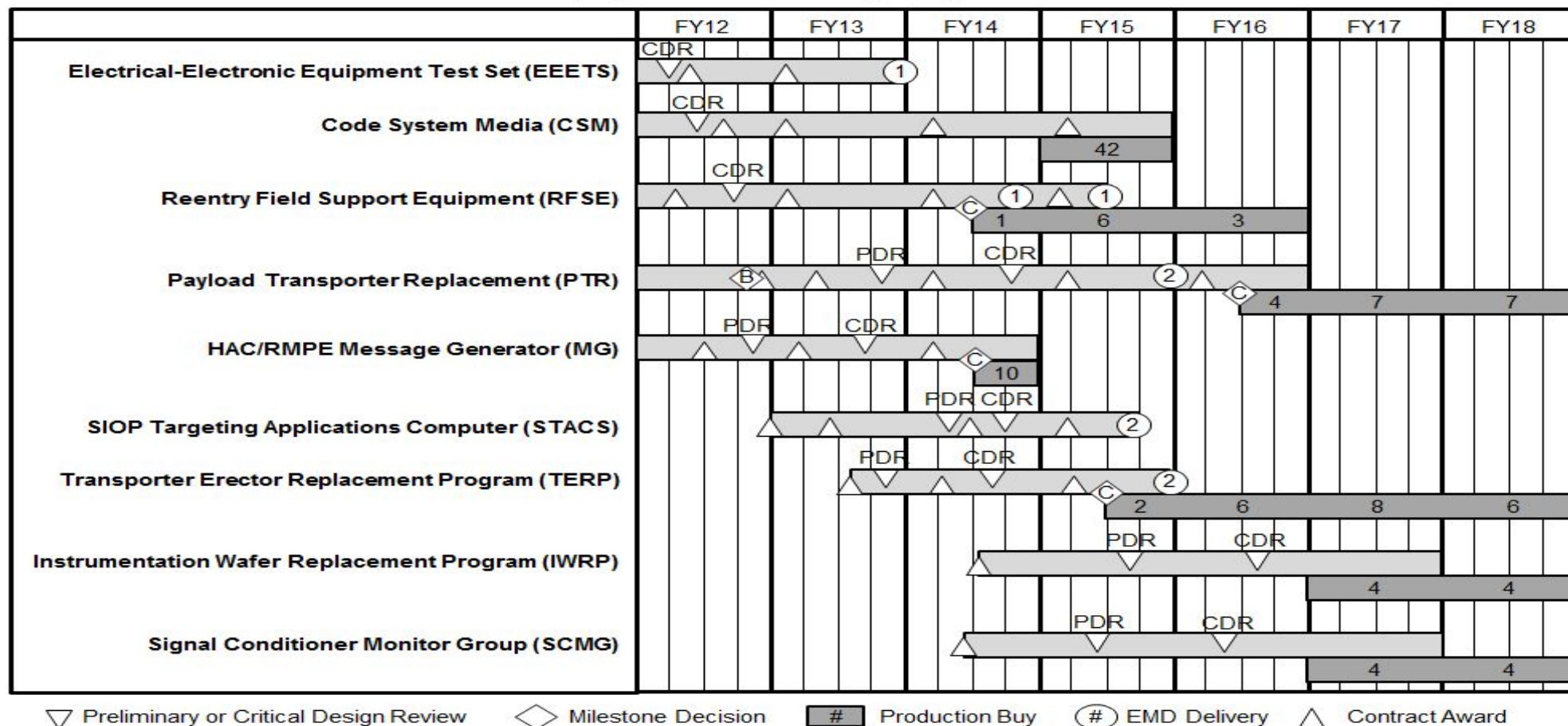
R-1 ITEM NOMENCLATURE

PE 0604851F: Intercontinental Ballistic
Missile - EMD

PROJECT

655037: Support Equipment

Support Equipment



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>	PROJECT 655037: <i>Support Equipment</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EEETS Critical Design Review (CDR)	1	2012	1	2012
EEETS EMD Delivery	4	2013	4	2013
CSM CDR	2	2012	2	2012
RFSE CDR	3	2012	3	2012
RFSE Milestone C	2	2014	2	2014
RFSE EMD Unit 1 Delivery	4	2014	4	2014
RFSE EMD Unit 2 Delivery	2	2015	2	2015
PTR Milestone B	4	2012	4	2012
PTR Engineering & Manufacturing Development (EMD) Contract Award	4	2012	4	2012
PTR Preliminary Design Review (PDR)	4	2013	4	2013
PTR CDR	4	2014	4	2014
PTR EMD Deliveries	4	2015	4	2015
PTR Milestone C	2	2016	2	2016
HAC/RMPE MG PDR	4	2012	4	2012
HAC/RMPE MG CDR	3	2013	3	2013
HAC/RMPE MG Milestone C	2	2014	2	2014
STACS EMD Contract Award	4	2012	4	2012
STACS PDR	2	2014	2	2014
STACS CDR	3	2014	3	2014
STACS EMD Deliveries	3	2015	3	2015
TERP EMD Contract Award	3	2013	3	2013
TERP PDR	4	2013	4	2013

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		Start		End	
Events		Quarter	Year	Quarter	Year
TERP CDR		3	2014	3	2014
TERP Milestone C		2	2015	2	2015
TERP EMD Deliveries		4	2015	4	2015
IWRP EMD Contract Award		3	2014	3	2014
IWRP PDR		3	2015	3	2015
IWRP CDR		3	2016	3	2016
SCMG EMD Contract Award		2	2014	2	2014
SCMG PDR		2	2015	2	2015
SCMG CDR		2	2016	2	2016

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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
655081: ICBM Crypto	-	27.943	32.044	47.898	-	47.898	22.400	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# 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												
Intercontinental Ballistic Missile (ICBM) Cryptography Upgrade Increment II (ICU II) executes USSTRATCOM, Air Force Global Strike Command (AFGSC), and Nuclear Weapon Safety Center (NWSC) requirements by implementing the KS-60 capabilities of remote key/code change and irreversible transformation as mandated in the approved Capabilities Development Document (CDD) dated 4 January 2005 and addresses Nuclear Weapon System Safety Group Operational Safety Review (NWSSG OSR) requirements 98-2, 00-1 and 02-2. It also incorporates continuous signal lockout capabilities to prevent the widespread loss of status monitoring. These features will greatly increase security during code changes by reducing the frequency of open sites 75 days annually and will reduce associated resource costs for 450 launch facilities (LF) and 45 launch control centers (LCC).												
The associated production funding for the program is in M30MLG, Minuteman III Modifications, starting in FY15.												
BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2012	FY 2013	FY 2014
Title: ICBM Crypto Upgrade Increment II (ICU II)										27.940	30.554	46.408
Description: ICBM Cryptography Upgrade II completes design and development, implements KS-60 remote key/code change, irreversible transformation capabilities, and prevents continuous signal lockout.												
FY 2012 Accomplishments:												
Conducted successful Milestone B briefing. Developed design of A4 drawer hardware components, identified and tested parts to ensure they meet hardness and weapon system specifications and obtained National Security Administration fail safe design approval. Completed A4 drawer prototype. Began Operational Ground Program (OGP), Console Operations Program (COP), Wing Code Processing System (WCPS) Minuteman Applications Program (WMAP) and Strategic Air Command Code Processing System (SCPS) Application Program (SAP) software update efforts. Completed Software Requirements Review. Started trainer												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force									DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604851F: Intercontinental Ballistic Missile - EMD				PROJECT 655081: ICBM Crypto		
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014
modification effort. Awarded Nuclear Safety Cross-Check Analysis (NSCCA) Performance Analysis & Technical Evaluation (PATE) contract. FY 2013 Plans: Continue A4 Drawer hardware development. Conduct a successful A4 Drawer Preliminary Design Review (PDR) and Critical Design Review (CDR). Continue development of OGP, COP, WMAP and SAP software development. Conduct software PDRs and CDRs. Continue development of trainer modifications. Continue NSCCA/PATE activities for nuclear surety and safety. FY 2014 Plans: Complete A4 Drawer development and conduct Test Readiness Review (TRR), qualification testing and weapon system testing. Complete OGP, COP, WMAP, and SAP software development and conduct Test Readiness Review (TRR), qualification testing and weapon system testing. Develop technical data and prepare for verification. Conduct hardware and software Developmental Test and Evaluation. Complete development of trainer modifications and conduct testing. Complete NSCCA/PATE activities for nuclear surety and safety. Prepare for Milestone C production decision.											
Title: Program Management Administration Description: Direct unique program cost required for program management and oversight. FY 2012 Accomplishments: Program support, travel, printing, supplies, Advisory and Assistance Service. FY 2013 Plans: Program support, travel, printing, supplies, Advisory and Assistance Service. FY 2014 Plans: Program support, travel, printing, supplies, Advisory and Assistance Service.									0.003	1.490	1.490
Accomplishments/Planned Programs Subtotals									27.943	32.044	47.898
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
• MPAF: BA 05: Line Item # M30MLG: Minuteman III Modifications	0.000	0.000	0.000		0.000	11.760	29.700	30.234	30.778	0.000	102.472
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>	PROJECT 655081: <i>ICBM Crypto</i>
D. Acquisition Strategy The ICBM Cryptography Upgrade (ICU) II Program utilizes the ICBM Prime Integration Contract (IPIC) services of Northrop Grumman (NG), which were competitively awarded, for the design and development of the ICU II capability. The contract type of the ICU II Engineering and Manufacturing Development (EMD) Contract is Cost Plus Incentive Fee. Also, ICU II EMD uses a separate contract for Nuclear Surety Cross Check Analysis/Performance Analysis and Technical Evaluation (NSCCA/PATE) Independent Validation & Verification (IV&V). The contract type is Cost Plus Fixed Fee, awarded to NG Technical Services. This contract is driven by critical nuclear surety requirements to perform an independent assessment of all modifications to nuclear-certified software.		
E. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0604851F: Intercontinental Ballistic Missile - EMD				PROJECT 655081: ICBM Crypto					
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
ICBM Prime Integration Contract	SS/CPIF	Northrop Grumman:Clearfield, UT	-	26.340	Mar 2012	25.061	Mar 2013	42.535	Mar 2014	-		42.535	Continuing	Continuing	TBD
Subtotal			0.000	26.340		25.061		42.535		0.000		42.535			
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
Engineering Suport	MIPR	NSA:,	-	0.000		0.850	Jun 2013	1.000	Jun 2014	-		1.000	Continuing	Continuing	
Cost Estimation	C/CPFF	Tecolote:Salt Lake City, UT	-	0.000		0.200	Dec 2012	0.200	Dec 2013	-		0.200	Continuing	Continuing	
Comprehensive Cost and Requirements System Support	C/CPFF	IDS:El Segundo, CA	-	0.000		0.143	Jan 2013	0.143	Jan 2014	-		0.143	Continuing	Continuing	
Subtotal			0.000	0.000		1.193		1.343		0.000		1.343			
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
Independant Validation and Verification	Various	ICBM Program Officer:Hill AFB, UT	-	1.600	Oct 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD
NSCCA/PATE	C/CPFF	Northrop Grumman:Clearfield, UT	-	0.000		4.000	Mar 2013	2.380	Mar 2014	-		2.380	Continuing	Continuing	
Hardness Test	MIPR	TBD:,	-	0.000		0.300	Jul 2013	0.150	Oct 2013	-		0.150	Continuing	Continuing	
Subtotal			0.000	1.600		4.300		2.530		0.000		2.530			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>						R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>				PROJECT 655081: <i>ICBM Crypto</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
PMA - Government Costs	Various	ICBM Program Office:Hill AFB, UT	-	0.003	Oct 2012	1.490	Nov 2012	1.490	Nov 2013	-		1.490	Continuing	Continuing	TBD
Subtotal			0.000	0.003		1.490		1.490		0.000		1.490			

	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	27.943	32.044	47.898	0.000	47.898			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 5: System Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604851F: *Intercontinental Ballistic Missile - EMD*

PROJECT

655081: *ICBM Crypto*

ICU II

	FY12	FY13	FY14	FY15	FY16	FY17	FY18
ICBM Crypto Upgrade, Increment II (ICU II)		PDR	CDR				
		B		C			
					55	300	207
						FY18 includes final installations & contract closeout	



7 Preliminary or Critical Design Review



Milestone Decision



Production Buy



EMD Delivery



Contract Award

PE 0604851F: *Intercontinental Ballistic Missile - EMD*
Air Force

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 5: *System Development & Demonstration (SDD)*

R-1 ITEM NOMENCLATURE

PE 0604851F: *Intercontinental Ballistic
Missile - EMD*

PROJECT

655081: *ICBM Crypto*

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B	2	2013	2	2013
Preliminary Design Review (PDR)	2	2013	2	2013
Critical Design Review (CDR)	4	2013	4	2013
Milestone C	3	2015	3	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force									DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604851F: Intercontinental Ballistic Missile - EMD				PROJECT 657006: ICBM EMD: Fuze Support			
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
657006: ICBM EMD: Fuze Support	-	39.717	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# 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												
In FY 2012, 657006, ICBM EMD: Fuze Support, efforts were transferred from PE 0604222F Nuclear Weapons Support, 654236, Engineering Analysis, in order to consolidate ICBM fuze-related activities as they progress towards deployable products.												
In FY 2013, 657006, ICBM EMD: Fuze Support, efforts were transferred to PE 0604933F, ICBM Fuze Modernization, 655082, ICBM Fuze Support, in order to distinguish the effort as a pre-ACAT I program.												
A. Mission Description and Budget Item Justification												
ICBM Fuze Modernization will provide a replacement Mk21 fuze associated with the W87 warhead and a Mk12A fuze associated with the W78/88-1 Life Extension Program (LEP) warhead. The Mk21 fuze is three times past its design life and ongoing Mk21 refurbishment does not meet Nuclear Weapon Stockpile Plan requirements. The Mk12A fuze must be modified to support the W78/88-1 LEP warhead incorporating enhanced nuclear surety capabilities required by National Security Presidential Directive (NSPD) 28.												
The fuze modernization schedule was rebaselined to ensure Mk12A fuze development remains sychronized with the W78/88-1 LEP warhead first production unit delivery shift from FY21 to FY23.												
The US Air Force will develop Mk21 and Mk12A fuzes in cooperation with the National Nuclear Security Administration (NNSA), US Navy and United Kingdom. ICBM Fuze Modernization will leverage technologies, parts, components and development/production capabilities resulting from extensive fuze work performed by the US Navy and NNSA. Mk21 and Mk12A fuzes will be similar to the US Navy D5 fuze, but W78/88-1 LEP and W87 warhead requirements dictate some unique differences. The ICBM Fuze Modernization program will also develop associated Minuteman III weapon system modifications, support equipment, data, flight test hardware, and training. It will also conduct required system testing (including ground and flight tests) and fielding efforts.												
As a cooperative USAF, USN and NNSA weapon sustainment acquisition, the USAF will implement joint DoD-DOE Nuclear Weapons Life Cycle Activities. The ICBM Fuze Modernization will be tailored to use joint DoD-DOE phase 6.X processes for routine nuclear stockpile activities to align with USN and NNSA operations.												
The production phase MPAF funding is budgeted under M30MLG, Minuteman III Modifications, starting in FY18.												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604851F: Intercontinental Ballistic Missile - EMD	PROJECT 657006: ICBM EMD: Fuze Support		
BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Title: Developmental Planning Description: Developmental planning, requirements definition, contract and acquisition strategy. FY 2012 Accomplishments: Completed concept assessment phase. Conducted Feasibility Study and Option Down-Select. Prepared and released request for proposals. FY 2013 Plans: Reflected in PE 0604933F ICBM Fuze Modernization, Project Number 655082 ICBM Fuze Support.		3.868	0.000	0.000
Title: System Engineering Description: Coordinate development efforts of W78 Life Extension Program (LEP) and Mk12A arming and fuzing. Synchronize DoD arming and fuzing and DoE warhead requirements. Study and assess weapon system cost/schedule/performance impacts. FY 2012 Accomplishments: Evaluated Air Force/Navy/United Kingdom performance requirements, physical characteristics, logistical and operation concepts, and physical environments. Developed common Military Characteristics (MCs) and Stockpile-to-Target Sequence (STS) requirements. Developed and validated modeling and simulation. Developed engineering design models. Examined nuclear surety themes as directed by National Security Presidential Directive (NSPD)-28. FY 2013 Plans: Reflected in PE 0604933F ICBM Fuze Modernization, Project Number 655082 ICBM Fuze Support.		7.043	0.000	0.000
Title: Hardware Development Description: Preliminary design of common technology, components, and parts. FY 2012 Accomplishments: Developed common parts, components and technology for application to Mk21 and Mk12A/W78 LEP arming and fuzing. Examined nuclear surety themes as directed by NSPD-28. FY 2013 Plans:		19.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force								DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>				PROJECT 657006: <i>ICBM EMD: Fuze Support</i>			

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
Reflected in PE 0604933F ICBM Fuze Modernization, Project Number 655082 ICBM Fuze Support.			
Title: Warhead Engineering/Oversight Description: Engineering/oversight of Air Force Fuze Modernization with NNSA warhead activities. FY 2012 Accomplishments: Provided engineering analysis, direction and evaluation. Developed and performed finite element modeling of reentry vehicles. Conducted environmental ground testing. Planned and supported extended range flight testing. FY 2013 Plans: Reflected in PE 0604933F ICBM Fuze Modernization, Project Number 655082 ICBM Fuze Support.	5.160	0.000	0.000
Title: Program Management Administration Description: Direct unique program cost required for program management and oversight. FY 2012 Accomplishments: Program support, travel, printing, supplies, Advisory and Assistance Service. FY 2013 Plans: Reflected in PE 0604933F ICBM Fuze Modernization, Project Number 655082 ICBM Fuze Support.	4.646	0.000	0.000
Accomplishments/Planned Programs Subtotals	39.717	0.000	0.000

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
• MPAF: BA05: Line Item # M30MLG: <i>Minuteman III Modifications</i>	0.000	0.000	0.000		0.000	0.000	0.000	0.000	50.000	1,892.200	1,942.200
• RDTE: BA05: PE 0604933F: <i>ICBM Fuze Modernization</i>	0.000	73.512	129.411		129.411	214.836	275.952	353.256	396.568	1,032.000	2,475.535
Remarks											
D. Acquisition Strategy											
Mk21 and Mk12A fuzes will be modernized in a coolaborative effort with the US Navy Mk5 fuze reducing total program cost and development time by leveraging potential compatibility and commonality of ICBM and Submarine Launched Ballistic Missile warheads and fuze components. The US Navy Mk5 fuze will be developed											

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>	PROJECT 657006: <i>ICBM EMD: Fuze Support</i>
first, followed by Mk21 and Mk12A. The US Navy Mk5 fuze entered Phase 6.3 Development Engineering in Aug 2012. USAF Mk21 fuze will enter Phase 6.3 in Mar 2013. Both Services participate in all design and development efforts to ensure use of adaptable comonents, subassemblies and technology. Both Services will use NNSA/SAndia National Laboratories to perform fuze design and development. The USAF will separately compete and contract for MM III unique missile modification and fuze integration efforts. <u>E. Performance Metrics</u> Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>						R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>						PROJECT 657006: <i>ICBM EMD: Fuze Support</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
Preliminary Design Development	MIPR	Sandia National Labs:Albuquerque, NM	-	19.000	Oct 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD
Subtotal			0.000	19.000		0.000		0.000		0.000		0.000			
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
Minuteman Systems Engineering	C/CPFF	Northrop Grumman:Clearfield, UT	-	7.043	Oct 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD
Acquisition and Engineering Support	C/CPFF	Booze Allen Hamilton:Clearfield, UT	-	2.800	Oct 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD
Warhead Engineering Support	MIPR	NNSA:Albuquerque, NM	-	1.500	Nov 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD
Extended Range Support	MIPR	Navy:Alexandria, VA	-	1.500	Feb 2012	0.000		0.000		-		0.000	Continuing	Continuing	TBD
LPO Engineering Support	C/CPFF	Booze Allen Hamilton:Albuquerque, NM	-	1.080	Jan 2012	0.000		0.000		-		0.000	Continuing	Continuing	TBD
LPO Program Management Support	C/CPFF	ITT:Albuquerque, NM	-	1.080	Oct 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD
Subtotal			0.000	15.003		0.000		0.000		0.000		0.000			
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 Planning	C/CPFF	Northrop Grumman:Clearfield, UT	-	1.000	Nov 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>							R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>				PROJECT 657006: <i>ICBM EMD: Fuze Support</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
Ground Test	Various	Little Mountain Test Facility:TBD, UT	-	0.500	Dec 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD
Subtotal			0.000	1.500		0.000		0.000		0.000		0.000			

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
Cost Estimation	C/T&M	Tecolote Research, Inc:Santa Barbara, CA	-	0.800	Nov 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD
Program Management Administration & SPO Support	Various	Hill AFB:Clearfield, UT	-	3.414	Oct 2011	0.000		0.000		-		0.000	Continuing	Continuing	TBD
Subtotal			0.000	4.214		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	39.717		0.000		0.000		0.000		0.000			

Remarks

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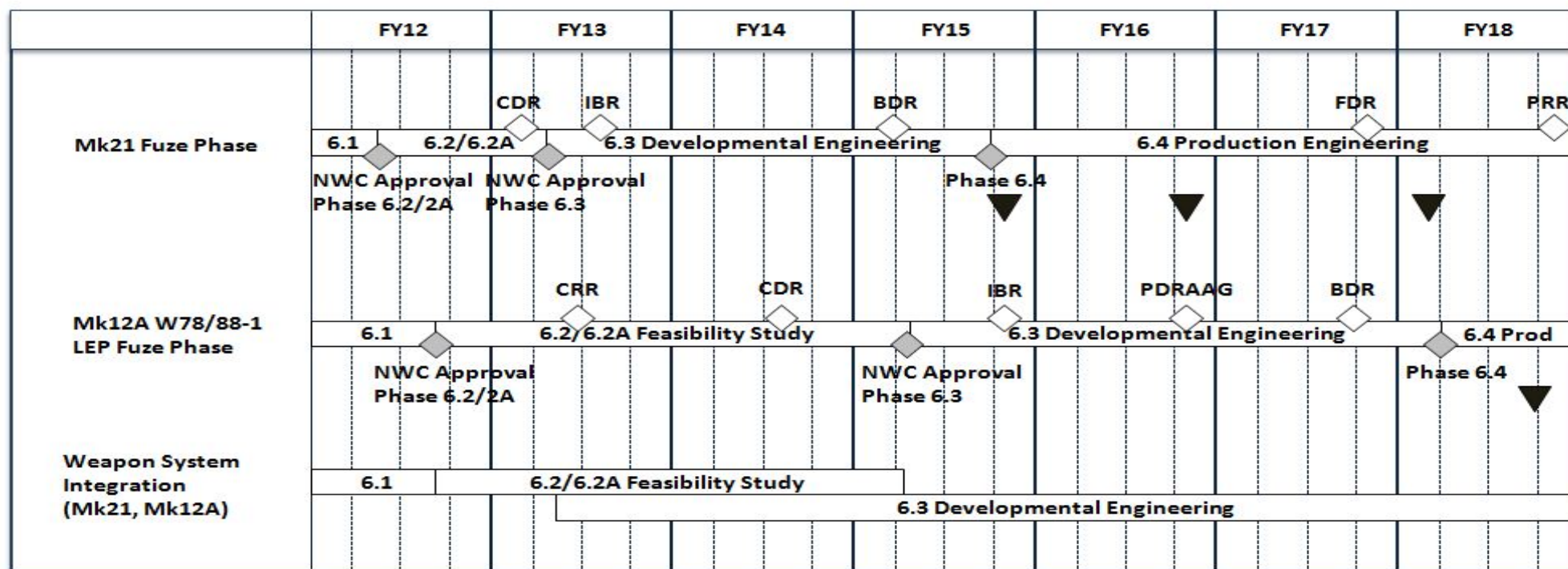
Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY3600: Research, Development, Test & Evaluation, Air Force
BA 5: System Development & Demonstration (SDD)**R-1 ITEM NOMENCLATURE**PE 0604851F: Intercontinental Ballistic
Missile - EMD**PROJECT**

657006: ICBM EMD: Fuze Support

ICBM Fuze Modernization



	Review		Milestone	BDR	Baseline Design Review	FDR	Final Design Review	PDRAAG	Preliminary Design Review & Acceptance Group
	Flight Tests	CRR	Customer Requirements Review	IBR	Initial Baseline Review	FDRAAG	FDR & Acceptance Group	PRR	Production Readiness Review

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>	PROJECT 657006: <i>ICBM EMD: Fuze Support</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Mk21 NWC Phase 6.2 Feasibility Study Approval	2	2012	2	2012
Mk21 Conceptual Design Review (CDR)	1	2013	1	2013
Mk21 NWC Phase 6.3 Development Engineering Approval	2	2013	2	2013
Mk21 Initial Baseline Review (IBR)	3	2013	3	2013
Mk21 Baseline Design Review (BDR)	1	2015	1	2015
Mk21 NWC Phase 6.4 Production Engineering	3	2015	3	2015
Mk21 Developmental Flight Tests	4	2015	4	2018
Mk21 Final Design Review (FDR)	4	2017	4	2017
Mk21 Production Readiness Review (PRR)	4	2018	4	2018
Mk12A NWC Phase 6.2 Feasibility Study Approval	3	2012	3	2012
Mk12A Customer Requirements Review (CRR)	2	2013	2	2013
Mk12A CDR	3	2014	3	2014
Mk12A NWC Phase 6.3 Development Engineering Approval	2	2015	2	2015
Mk12A IBR	4	2015	4	2015
Mk12A Preliminary Design Review & Acceptance Group (PDRAAG)	4	2016	4	2016
Mk12A BDR	3	2017	3	2017
Mk12A NWC Phase 6.4 Production Engineering	1	2018	1	2018
Mk12A Developmental Flight Tests	3	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604851F: Intercontinental Ballistic Missile - EMD				PROJECT 657010: Operational Equipment			
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
657010: Operational Equipment	-	0.000	8.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# 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 Operational Equipment program designs, develops, and tests replacement of weapon system equipment. The effort includes the Solid Rocket Motor (SRM) Modernization program which will define operational requirements, investigate available technologies and prepare an acquisition strategy for SRM development. This effort, coupled with Propulsion Application Program,under PE 0603851F, ICBM Demonstration/Validation, will support development of requirements and implementation timeline for a follow-on SRM program.												
BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2012	FY 2013	FY 2014
Title: Solid Rocket Motor (SRM) Modernization										0.000	7.600	0.000
Description: Effort will focus on reducing the total ownership cost of the Minuteman III weapon system by utilizing technologies developed in the Intercontinental Ballistic Missile Propulsion Applications Program to modernize the Minuteman III booster stack to address maintenance and obsolescence issues realized in the legacy system.												
FY 2013 Plans: Accomplish studies to investigate the application of new technologies into the Minuteman III booster stack. Evaluate current Minuteman III solid rocket motor requirements and update as required based on legacy system issues and availability of mature technology that will reduce total ownership costs.												
Title: Program Management Administration										0.000	0.400	0.000
Description: Direct unique program cost required for program management and oversight.												
FY 2013 Plans: Program support, travel, printing, supplies, Advisory and Assistance Service.												
Accomplishments/Planned Programs Subtotals										0.000	8.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>			PROJECT 657010: <i>Operational Equipment</i>			
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>
• RDTE: BA04: PE 0603851F: <i>ICBM - Dem/Val, PAP</i>	43.327	44.959	40.853		40.853	49.267	48.851	47.715	48.574	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
SRM Modernization will conduct pre-acquisition efforts in conjunction with ongoing ICBM Demonstration/Validation Propulsion Application Program efforts maturing SRM technologies. As these efforts are conducted and results from SRM aging and surveillance activities and Ground Based Strategic Deterrent (GBSD) Analysis of Alternatives become available, a follow-on SRM Modernization strategy will be established.											
FY13 SRM Modernization funding will be disbursed using two contract vehicles. The first contract will utilize Hill AFB's Design Engineering Support Program (DESP III). This will be a competitive source selection, Indefinite Delivery, Indefinite Quantity (ID/IQ), Cost Plus Fixed Fee (CPFF) contract. The second effort will use the existing Space and Missile Systems Center (SMC) GSA contract which is a Firm Fixed Price (FFP) contract.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force													DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>							R-1 ITEM NOMENCLATURE PE 0604851F: <i>Intercontinental Ballistic Missile - EMD</i>				PROJECT 657010: <i>Operational Equipment</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
Technical Requirements Analysis	C/TBD	TBD:TBD,	-	0.000		7.600	Apr 2013	0.000		-		0.000	Continuing	Continuing	TBD
Subtotal			0.000	0.000		7.600		0.000		0.000		0.000			
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
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
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
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
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
Program Management Administration & SPO/ Other Support	Various	Various:,	-	0.000		0.400	Apr 2013	0.000		-		0.000	Continuing	Continuing	TBD
Subtotal			0.000	0.000		0.400		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		8.000		0.000		0.000					
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 5: *System Development & Demonstration (SDD)*

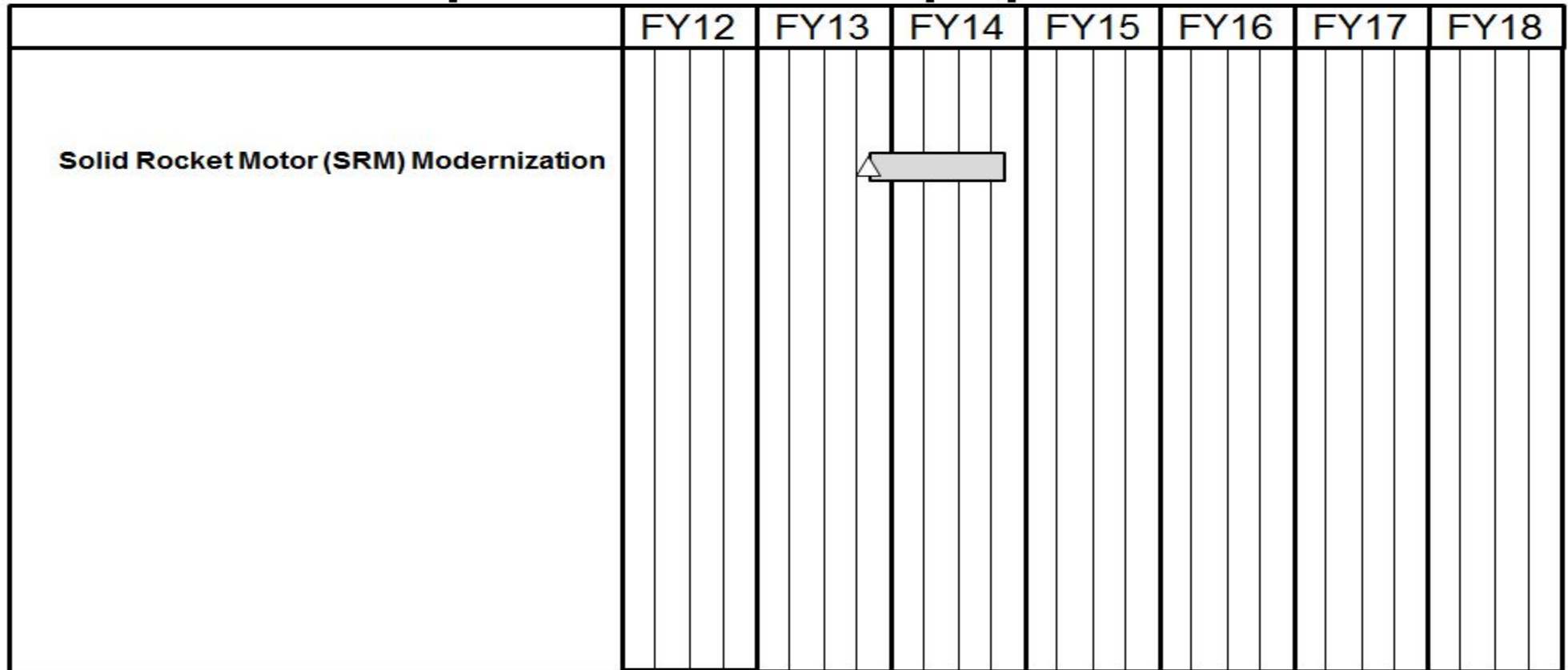
R-1 ITEM NOMENCLATURE

PE 0604851F: *Intercontinental Ballistic Missile - EMD*

PROJECT

657010: *Operational Equipment*

Operational Equipment



Preliminary or Critical Design Review



Milestone Decision



Production Buy



EMD Delivery



Contract Award

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)	PE 0604851F: Intercontinental Ballistic Missile - EMD	657010: Operational Equipment	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SRM Modernization Contract Award	4	2013	4	2014