

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2013 Air Force **DATE:** February 2012

<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	66.342	148.307	135.437	-	135.437	130.417	61.323	1.363	1.707	Continuing	Continuing
655037: <i>Support Equipment</i>	53.654	62.240	95.393	-	95.393	82.519	52.263	1.363	1.707	Continuing	Continuing
655081: <i>ICBM Crypto</i>	-	43.953	32.044	-	32.044	47.898	9.060	-	-	Continuing	Continuing
657006: <i>ICBM EMD: Fuze Support</i>	-	42.114	-	-	-	-	-	-	-	Continuing	Continuing
657010: <i>Operational Equipment</i>	12.688	-	8.000	-	8.000	-	-	-	-	Continuing	Continuing

**Note**

In FY2012, the fuze efforts in Project Number 657006, ICBM EMD: Fuze Support, were transferred from PE 0604222F Nuclear Weapons Support in order to consolidate service activities as they progress towards deployable products.

In FY2013, Project Number 657006, ICBM EMD: Fuze Support, was transferred to PE 0604933F in order to distinguish the effort as a pre-ACAT I program.

In FY2013, Project Number 655037, Support Equipment, includes the Transporter Erector (TE) Replacement new start effort.

In FY2013, Project Number 657010, Operational Equipment includes the Solid Rocket Motor Modernization new start to begin requirements definition to support a future production program.

**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 equipment. The efforts include design, development, and testing of replacement Electrical-Electronic Equipment Test Sets, Reentry Field Support Equipment, Minuteman Code System Media, the Payload Transporter Tractor and Trailer, Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) Message Generator, the Targeting Application Computer for Single Integrated Operation Plan (SIOP) Targeting Application Computer System (STACS) and Transporter Erectors (TE).

The ICBM Cryptography Upgrade Increment II program expands on the ICBM Cryptography Upgrade Increment I program to incorporate remote key/code change and irreversible transformation of launch/enable codes increasing nuclear weapons security during annual code change cycles.

ICBM EMD: Fuze Support reflects FY2012 effort related to fuze modernization efforts previously included in PE 0604222F and now included in PE 0604933.

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<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>R-1 ITEM NOMENCLATURE</b>
3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i>	PE 0604851F: <i>ICBM - EMD</i>
BA 5: <i>Development &amp; Demonstration (SDD)</i>	

The Operational Equipment program designs, develops, and tests replacement of weapon system equipment. The efforts include: (1) design, development, and testing of modifications to the Weapon System Processor (WSP) circuit card to prevent status monitoring loss and modifications to WSP circuit card seating hardware; (2) solid rocket motor modernization efforts to define operational requirements and acquisition strategy for a solid rocket motor follow-on 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013 Base</b>	<b>FY 2013 OCO</b>	<b>FY 2013 Total</b>
Previous President's Budget	71.843	158.477	198.491	-	198.491
Current President's Budget	66.342	148.307	135.437	-	135.437
Total Adjustments	-5.501	-10.170	-63.054	-	-63.054
• Congressional General Reductions	-	-0.170			
• Congressional Directed Reductions	-	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.000	-			
• SBIR/STTR Transfer	-2.057	-			
• Other Adjustments	-0.444	-	-63.054	-	-63.054

**Change Summary Explanation**

FY2011 adjustments reflect a \$3M reprogramming and \$2.057 for SBIR.

FY2012 Congressional Directed Reductions reflect contract delays in Project Number 655037, Support Equipment.

For FY2013, funding reflects an \$18.321M increase to project number 655037 for the Transporter Erector (TE) Replacement new start program, an \$8.0M increase for the Solid Rocket Motor Modernization Program new start, a \$73.512M transfer of ICBM Fuze Modernization to PE 0604933, and a \$17.130M decrease for higher Air Force priorities.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2013 Air Force **DATE:** February 2012

<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>	<b>PROJECT</b> 655037: <i>Support Equipment</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
655037: <i>Support Equipment</i>	53.654	62.240	95.393	-	95.393	82.519	52.263	1.363	1.707	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**Note**

In FY2013, Project Number 655037, Support Equipment, includes the Transporter Erector (TE) Replacement new start effort.

**A. Mission Description and Budget Item Justification**

The ongoing Support Equipment program replaces obsolete/unsupportable/non-serviceable weapon system support equipment necessary to extend the operational life of the Minuteman III (MM III) weapon system through 2030. The efforts include design, development, and testing of replacement Electrical-Electronic Equipment Test Sets, Reentry Field Support Equipment, Minuteman Code System Media, the Payload Transporter Tractor and Trailer, Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) Message Generator, the Targeting Application Computer for Single Integrated Operation Plan (SIOP) Targeting Application Computer System (STACS) and the Transporter Erector (TE). The production phase, MPAF funding is budgeted under MMIII Support Equipment Replacement, PE 0101213F.

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 2011	FY 2012	FY 2013
<b>Title:</b> Electrical-Electronic Equipment Test Set (EEETS)	5.703	4.389	3.500
<b>Description:</b> Design and develop the EEETS necessary for production/pre-launch checkout of MOD 7 wafer required for the ongoing test launch program. The program will replace the current unsupportable test set which consists of a non-standard processor, proprietary software, and requires Digital-to-Analog Converter (DAC) cards no longer made (no suitable substitute).			
<b>FY 2011 Accomplishments:</b> Continued design, development, fabrication and testing of EEETS. Completed Preliminary Design Review.			
<b>FY 2012 Plans:</b> Continue design, development, fabrication and testing of EEETS. Complete Critical Design Review.			
<b>FY 2013 Plans:</b> Complete design, development, fabrication and testing of EEETS. Install, test, audit and verify first unit.			
<b>Title:</b> Reentry Field Support Equipment (RFSE)	28.848	37.782	28.235

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Air Force		<b>DATE:</b> February 2012		
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
<p><b>Description:</b> Design and develop the RFSE to replace the current reentry systems test set. The effort will increase the mean time between failure, eliminate unneeded Mk12 functions, and add new Mk21 functions. It will provide capability through 2030 to meet DoE mandated Limited Life Component warhead swaps and to test electrical continuity during buildup of MM III Reentry Systems</p> <p><b>FY 2011 Accomplishments:</b> Continued design, development, fabrication and testing of RFSE. Continued IV&amp;V for the RFSE. Completed Preliminary Design Review.</p> <p><b>FY 2012 Plans:</b> Continue design, development, fabrication and testing of RFSE. Continue IV&amp;V for the RFSE. Complete Critical Design Review (CDR).</p> <p><b>FY 2013 Plans:</b> Continue design, development, fabrication and testing of RFSE. Continue IV&amp;V for the RFSE. Complete Critical Design Review (CDR).</p>				
<p><b>Title:</b> Code System Media (CSM)</p> <p><b>Description:</b> The Minuteman CSM effort will develop software to support management of data flow and data products to keep the Minuteman III weapon system into operational mode. Current CSM processes utilize DC300 tape cartridges and 9-track tapes. Beginning in FY11, the National Security Agency (NSA) is no longer using DC300 tape cartridges and the shelf life expires in 2013 for the remaining 9-track tapes. The software will be modified to use CD-ROMs as the new media. Ensures capability through 2030 to load codes/software on MM ICBMs--critical to CY12 code change.</p> <p><b>FY 2011 Accomplishments:</b> Continued design, development, fabrication and testing of CSM. Continued Nuclear Surety Cross-Check Analysis (NSCCA) for the CSM. Completed Preliminary Design Review.</p> <p><b>FY 2012 Plans:</b> Continue design, development, fabrication and testing of CSM software. Continue NSCCA for the CSM. Complete CDR. Begin design, development and testing of Cartridge Tape Unit Replacement unit.</p> <p><b>FY 2013 Plans:</b> Continue design, development, and testing of CSM software. Continue NSCCA for the CSM. Continue design, development and testing of Cartridge Tape Unit replacement unit.</p>		17.264	10.682	13.639
<p><b>Title:</b> Payload Transporter Tractor and Trailer (PT III)</p>		0.790	3.025	22.320

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
<p><b>Description:</b> Design and develop the capabilities necessary to replace the current PT III, mitigating emerging threat technologies and methods. The new Weapons Transporter design increases safety and security during transport activities and improves maintenance operations.</p> <p><b>FY 2011 Accomplishments:</b> Performed requirements definition for PT III.</p> <p><b>FY 2012 Plans:</b> Begin design, development, of replacement PT III.</p> <p><b>FY 2013 Plans:</b> Continue design, development, fabrication and testing of replacement PT III.</p>				
<p><b>Title:</b> Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) message generator</p> <p><b>Description:</b> Design and develop the replacement for the Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) message generator due to obsolescence and unsupportability for repair. This program will address the replacement of Test Support Equipment (TSE) with a modern, sustainable common platform and standard interfaces.</p> <p><b>FY 2011 Accomplishments:</b> Began design, development, fabrication and testing of HAC/RMPE message generator.</p> <p><b>FY 2012 Plans:</b> Continue design, development, fabrication and testing of HAC/RMPE message generator. Complete PDR/CDR.</p> <p><b>FY 2013 Plans:</b> Complete design, development, fabrication and testing of HAC/RMPE message generator. Complete developmental testing and FCA/PCA.</p>		1.049	2.153	1.595
<p><b>Title:</b> Single Integrated Operational Plan (SIOP) Targeting Applications Computer System (STACS)</p> <p><b>Description:</b> Design and develop a replacement computer for the STACS. The program will enable output to compact disc media and update/replace unsupportable/obsolete hardware and software.</p> <p><b>FY 2011 Accomplishments:</b> N/A</p> <p><b>FY 2012 Plans:</b></p>		-	4.209	7.783

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2011	FY 2012	FY 2013
Begin design and development activities. Complete PDR.			
<b>FY 2013 Plans:</b> Continue design and development activities. Complete Critical Design and Technology Readiness Reviews.			
<b>Title:</b> Transporter Erector Replacement Program (TERP) <b>Description:</b> Design and develop the capabilities necessary to replace the current TE. Update drawings, specifications and TOs to eliminate parts obsolescence and address intended usage through 2030. Qualify system prior to production.	-	-	18.321
<b>FY 2011 Accomplishments:</b> N/A			
<b>FY 2012 Plans:</b> N/A			
<b>FY 2013 Plans:</b> Begin design, development, fabrication and testing of replacement TE.			
<b>Accomplishments/Planned Programs Subtotals</b>	53.654	62.240	95.393

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MPAF: <i>PE 0101213F, Minuteman Squadrons, MM III Missile Replacement Equipment - Ballistic</i>	59.763	67.706	56.906	0.000	56.906	82.449	149.632	52.903	59.519	Continuing	Continuing

**D. Acquisition Strategy**  
The support equipment replacement programs will be Cost Plus Incentive Fee (CPIF) contract addendums added to the ICBM Prime Integration Contract (IPIC) for everything but the NSCCA and IV&V efforts, which will be contracted for 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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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>	<b>PROJECT</b> 655037: <i>Support Equipment</i>

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>	<b>PROJECT</b> 655037: <i>Support Equipment</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Electrical-Electronic Equipment Test Set (EEETS) Preliminary Design Review (PDR)	2	2011	2	2012
Reentry Field Support Equipment (RFSE) PDR	2	2011	2	2011
Code System Media (CSM) PDR	3	2011	3	2011
PT III Requirements Definition	4	2011	4	2011
EEETS Critical Design Review (CDR)	1	2012	1	2012
RFSE and CSM Critical Design Review (CDR)	2	2012	2	2012
HAC/RMPE Msg Gen PDR	3	2012	3	2012
STACS PDR	3	2012	3	2012
PT III EMD Phase	4	2012	4	2012
STACS and HAC/RMPE CDRs	1	2013	1	2013
EEETS Physical and Functional Configuration Audits (CA)	1	2013	1	2013
CSM Technology Readiness Review (TRR)	1	2013	1	2013
STACS and HAC/RMPE TRRs	3	2013	3	2013
Transporter Erector (TE) contract Award	3	2013	3	2013
PT III PDR	4	2013	4	2013
HAC/RMPE Message Generator and STACS CAs	4	2013	1	2014
CSM and RFSE CAs	1	2014	1	2014
PT III CDR	4	2014	4	2014
PT III CA	4	2015	4	2015
TE PDR	4	2015	4	2015
TE CDR	4	2016	4	2016
TE CA	3	2017	3	2017

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>	<b>PROJECT</b> 655081: <i>ICBM Crypto</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
655081: <i>ICBM Crypto</i>	-	43.953	32.044	-	32.044	47.898	9.060	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**A. Mission Description and Budget Item Justification**

Increment II of the Intercontinental Ballistic Missile Cryptography Upgrade program 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. These features will greatly increase security during code changes by reducing the frequency of open sites 75 days annually and reduce associated resource costs for 450 launch facilities (LF) and 45 launch control centers (LCC).

The associated production funding for the program is in PE 0101213F Minuteman Squadrons, MM III Modifications.

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 2011	FY 2012	FY 2013
<b>Title:</b> ICU II	-	43.953	32.044
<b>Description:</b> ICBM cryptography upgrade II completes the design and development and implements the KS-60 capabilities of remote key/code change and irreversible transformation.			
<b>FY 2011 Accomplishments:</b> Continued requirements definition, validation and risk mitigation for future design, develop & test of the software upgrades/ changes to the Console Operating Program, Launch Facility hardware/software modification and Wing Code Processing System.			
<b>FY 2012 Plans:</b> Develop design of A4 drawer hardware components, identify and test parts to ensure they meet hardness and weapon system specifications, supply chain risk management, and obtain NSA Fail Safe Design approval. Start OGP, COP, WMAP and SAP software update effort. Start Trainer modification effort.			
<b>FY 2013 Plans:</b> Preliminary Design Reviews for Hardware and Software. Continue A4 Drawer hardware and software development. Test A4 drawer to do Irreversible Transformation and Remote Code Change using the SDS emulator and SDS.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	43.953	32.044

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Air Force	<b>DATE:</b> February 2012
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MPAF: <i>PE 0101213F, Minuteman Squadrons, Modification 5916</i>	0.000	0.000	0.000	0.000	0.000	13.174	25.048	29.700	30.234	Continuing	Continuing

**D. Acquisition Strategy**

Cost Plus Incentive Fee contract will be added to the ICBM Prime Integration Contractor (IPIC).

**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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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>	<b>PROJECT</b> 655081: <i>ICBM Crypto</i>

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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Preliminary Design Review (PDR)	2	2013	2	2013
Critical Design Review (CDR)	2	2014	2	2014
Technology Readiness Review (TRR)	1	2014	1	2014
Configuration Audit	3	2015	3	2015

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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
657006: <i>ICBM EMD: Fuze Support</i>	-	42.114	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**Note**

In FY2012, the fuze efforts in Project Number 657006, ICBM EMD: Fuze Support, were transferred from PE 0604222F Nuclear Weapons Support in order to consolidate service activities as they progress towards deployable products.

In FY2013, Project Number 657006, ICBM EMD: Fuze Support, was transferred to PE 0604933F in order to distinguish the effort as a pre-ACAT I program.

**A. Mission Description and Budget Item Justification**

ICBM Fuze Support activities include: (1) ICBM Fuze Modernization program will replace the Mk21 fuze to meet warfighter requirements and maintain current capability (2) Develop a new Mk12A fuze capability to integrate with W78 Life Extension Program (LEP) and (3) provide Air Force direction and oversight of the W78 LEP to meet Presidential Decision Directive 9 (PDD-9, July 2011) and the Requirements Planning Document that directs the number and mix of nuclear weapons to support the national nuclear deterrent. The Air Force ICBM Fuze Modernization Program will work in conjunction with the W78 LEP, National Nuclear Security Administration (NNSA), Navy, and United Kingdom (UK) Ministry of Defense (MOD) to capitalize on the extensive fuze work done to date by the Navy and NNSA, and make maximum use of joint technologies, parts, components, and development/production capabilities. Additionally, the ICBM Fuze Modernization program will address the associated Minuteman III weapon system modifications, system testing, support equipment, data, training, and fielding efforts required to support the new Mk21 fuze and Mk12A/W78 LEP.

ICBM Fuze Support will continue studies, system engineering, modeling and testing, and development planning leading to a development effort for the Mk21 and Mk12A/W78 LEP replacement fuzes. Development effort will make maximum use of technologies, parts, and components developed under the Navy Mk5 Alteration Program. The W78 life extension oversight and engineering will identify and develop the specific LEP for the W78, identifying solutions to problems or deficiencies, opportunities to incorporate enhanced surety concepts to meet National Security Presidential Directive 28 requirements, integration of the Air Force Fuze Modernization Program and the NNSA W78 LEP development, and the related supporting infrastructure.

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

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

	FY 2011	FY 2012	FY 2013
<b>Title:</b> Developmental Planning	-	8.514	-
<b>Description:</b> Developmental planning, requirements definition, contract and acquisition strategy.			
<b>FY 2011 Accomplishments:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Air Force		<b>DATE:</b> February 2012		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>	<b>PROJECT</b> 657006: <i>ICBM EMD: Fuze Support</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
Reflected in PE 0604222F, Project Number 654236 <b>FY 2012 Plans:</b> Complete concept assessment phase. Conduct Feasibility Study and Option Down-Select. Prepare and release request for proposals. <b>FY 2013 Plans:</b> Reflected in PE 0604933F, Project Number 655082				
<b>Title:</b> System Engineering <b>Description:</b> 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. <b>FY 2011 Accomplishments:</b> Reflected in PE 0604222F, Project Number 654236 <b>FY 2012 Plans:</b> Continue to evaluate AF-USN-UK performance requirements, physical characteristics, logistical and operation concepts, and physical environments. Develop common Military Characteristics (MCs) and Stockpile-to-Target Sequence (STS) requirements. Continue to develop and validate modeling and simulation. Develop engineering design models. Examine nuclear surety themes as directed by National Security Presidential Directive (NSPD)-28. <b>FY 2013 Plans:</b> Reflected in PE 0604933F, Project Number 655082		-	9.440	-
<b>Title:</b> Hardware Development <b>Description:</b> Preliminary design of common technology, components, and parts. <b>FY 2011 Accomplishments:</b> Reflected in PE 0604222F, Project Number 654236 <b>FY 2012 Plans:</b> Develop common parts, components and technology for application to Mk21 and Mk12A/W78 LEP arming and fuzing. Examine nuclear surety themes as directed by NSPD-28. <b>FY 2013 Plans:</b> Reflected in PE 0604933F, Project Number 655082		-	19.000	-
<b>Title:</b> Warhead Engineering/Oversight		-	5.160	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
<p><b>Description:</b> Engineering/oversight of Air Force Fuze Modernization with NNSA warhead activities.</p> <p><b>FY 2011 Accomplishments:</b> N/A</p> <p><b>FY 2012 Plans:</b> Provide engineering analysis, direction and evaluation. Develop and perform finite element modeling of Reentry Vehicles. Conduct environmental ground testing. Plan and support extended range flight testing.</p> <p><b>FY 2013 Plans:</b> Reflected in PE 0604933F, Project Number 655082</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	-	42.114	-

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013 Base</b>	<b>FY 2013 OCO</b>	<b>FY 2013 Total</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• MPAF, Missile Procurement - AF: <i>PE 0101213: Minuteman Squadrons, Modification 5915</i>	0.000	0.000	0.000	0.000	0.000	0.000	11.648	14.000	14.252	Continuing	Continuing
• RDT&E, AF: <i>PE 0604222F: Nuclear Weapons Support, 64236 Engineering Analysis, Joint Fuze</i>	9.740	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• RDT&E, AF (2)...: <i>PE 0604399F: ICBM Fuze Modernization, 655082 ICBM Fuze Support</i>	0.000	0.000	73.512	0.000	73.512	140.511	284.843	389.212	433.741	Continuing	Continuing

**D. Acquisition Strategy**  
Pre-Acquisition program development requires contracts to support the program office in risk reduction, cost estimates, feasibility assessment, development engineering, requests for proposals, source selection, systems engineering, warhead engineering and oversight activities and program planning. Program office will also continue fuze studies and analysis of weapon systems impacts and support to the W78 Life Extension Program. NNSA/Sandia National Laboratories is performing the Design/Development of the AF Fuzes. Development engineering phase 6.3 is planned to start in FY2013.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
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**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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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>	<b>PROJECT</b> 657006: <i>ICBM EMD: Fuze Support</i>

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>	<b>PROJECT</b> 657006: <i>ICBM EMD: Fuze Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Conceptual Design Review (CDR) Mk21	1	2013	1	2013
Conceptual Design Review (CDR) Mk12A	2	2013	2	2013
Development Engineering Mk21	3	2013	4	2015
Nuclear Weapons Council 6.3 Entry Approval	3	2013	3	2013
Development Engineering Mk 12A	3	2013	4	2015
Baseline Design Review (BDR) Mk21	2	2014	2	2014
Baseline Design Review (BDR) Mk12A	3	2015	3	2015
Nuclear Weapons Council 6.4 Entry Approval	1	2016	1	2016
Production Engineering MK21	1	2016	4	2017
Production Engineering Mk12A	1	2016	4	2017
Phase 6.1 Concept Assessment	3	2011	1	2012
Phase 6.2 Feasibility Study	2	2012	3	2013
Phase 6.2A Design Definition	4	2012	2	2013
Phase 6.3 Development Engineering	3	2013	4	2015
Phase 6.4 Production Engineering	1	2016	4	2017

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**Exhibit R-2A, RDT&E Project Justification:** PB 2013 Air Force **DATE:** February 2012

<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>	<b>PROJECT</b> 657010: <i>Operational Equipment</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
657010: <i>Operational Equipment</i>	12.688	-	8.000	-	8.000	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**Note**

In FY2011, Project Number 657010, Operational Equipment, was created to include the two Weapon System Processor efforts. Funds were realigned from Project Number 655037, Support Equipment.

In FY2013, Project Number 657010, Operational Equipment includes the Solid Rocket Motor Modernization new start to begin requirements definition to support a future production program.

**A. Mission Description and Budget Item Justification**

The Operational Equipment program designs, develops and tests replacements for operational weapon system equipment as required to extend the operational life of the Minuteman III (MM III) weapon system through 2030. Operational Equipment activities include (1) the Solid Rocket Motor (SRM) Modernization program, (2) hardware and software modifications to the Weapon System Processor (WSP) circuit card failure mode to prevent status monitoring faults, and (3) hardware modifications necessary to ensure circuit cards remain properly seated within the WSP.

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 2011	FY 2012	FY 2013
<p><b>Title:</b> Weapon System Processor (WSP) Circuit Card Failure</p> <p><b>Description:</b> Design and develop hardware and software modifications to the WSP circuit card to prevent recurrence of status monitoring faults. Effort will design/develop jamming detector circuitry and update Console Operations Program software.</p> <p><b>FY 2011 Accomplishments:</b> Designed and developed hardware and software modifications to the WSP circuit card failure mode to prevent recurrence of status monitoring faults. Designed and developed jamming detector circuitry and updated Console Operations Program software.</p>	9.970	-	-
<p><b>Title:</b> Weapon System Processor (WSP) Circuit Card Reseating</p> <p><b>Description:</b> Design and develop the modifications required to decrease potential for loose and/or improperly seated circuit cards in WSP prevent recurrence of status monitoring faults. Effort will include design and develop mechanical insertion/inspection hardware necessary to ensure cards are properly installed and remain fully seated.</p>	2.718	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Air Force	<b>DATE:</b> February 2012
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604851F: <i>ICBM - EMD</i>	<b>PROJECT</b> 657010: <i>Operational Equipment</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2011	FY 2012	FY 2013
<p><b><i>FY 2011 Accomplishments:</i></b> Designed and developed modifications required to decrease potential for loose and/or improperly seated circuit cards in WSP prevent recurrence of status monitoring faults. Designed and developed mechanical insertion/inspection hardware necessary to ensure cards are properly installed and remain fully seated.</p>			
<p><b><i>Title:</i></b> Solid Rocket Motor (SRM) Modernization</p> <p><b><i>Description:</i></b> 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.</p> <p><b><i>FY 2013 Plans:</i></b> 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. Prepare for release of requests for proposals.</p>	-	-	8.000
<b>Accomplishments/Planned Programs Subtotals</b>	12.688	-	8.000

**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• MPAF: <i>PE0101213F, Minuteman Squadrons</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

**D. Acquisition Strategy**  
WSP - Implement Operations Review Board recommendations through the ICBM Prime Integration Contract.

SRM - TBD

**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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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
WSP Fallure Mode PDR	3	2011	3	2011
WSP Fallure Mode CDR	4	2011	4	2011
WSP Fallure Mode TRR	1	2012	1	2012
WSP Fallure Mode CA	3	2012	3	2012
WSP Card Reseating PDR	3	2011	3	2011
WSP Card Reseating CDR	4	2011	4	2011
WSP Card Reseating TRR	1	2012	1	2012
WSP Card Reseating CA	2	2012	2	2012
SRM Modernization AFNWC Decision	1	2013	2	2014
SRM Modernization Contract Award	2	2013	2	2013