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<b>Missile Defense Agency (MDA) Exhibit R-2 RDT&amp;E Budget Item Justification</b>					Date <b>May 2009</b>			
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<b>APPROPRIATION/BUDGET ACTIVITY</b>			<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>			<b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>					

COST (\$ in Thousands)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total PE Cost	2,198,664	1,507,481	982,922					
WX08 GM Capability Development	0	0	3,855					
AX08 Ground Based Midcourse Defense (GMD) Block 1.0	1,229,805	25,178	0					
CX08 Ground Based Midcourse Defense (GMD) Block 3.0	451,635	1,152,057	764,976					
DX08 Ground Based Midcourse Defense (GMD) Block 4.0	105,883	0	0					
XX08 Ground Based Midcourse Defense (GMD) Sustainment	278,423	266,564	195,369					
ZX40 Program-Wide Support	132,918	63,682	18,722					

*The best way to dissuade, deter, and defeat ballistic missile threats is through integrated ballistic missile defense capabilities--weapons, sensors, and command and control, battle management and communications (C2BMC). A potential or actual attack may cross regions and may fly higher and faster than stand-alone, autonomous capabilities operated by a single Military Service can defend against. Integrated BMD capabilities draw on space-, land-, and sea-based assets operated by multiple Services to provide both the best sensor information on the enemy missile's location and track as well as a more diverse and effective set of weapon options for the Combatant Commander to defeat the attack all connected by a unifying C2BMC system. As a result, an effort funded in a Program Element may be critical to success of efforts in other Program Elements -- we refer to these connections as ``interdependencies.`` Throughout the budget justification material, we have attempted to highlight interdependencies in order to explain the relationship between different parts of the proposed program.*

*Program content for 2-Stage Development and European Interceptor Site (EIS), previously planned for FY09 in the Midcourse PE (0603882C) has been transferred to the new BMDS European Interceptor Site (0603908C).*

*Starting in FY10, the BMDS EIS PE will be combined into an integrated European Capability PE (0603911C).*

*Beginning FY10, GM Capability Development, Project WX08, has been added to PE (0603882C).*

*Based on FY09 Congressional direction, the Element Targets program content and funding transferred to the Test and Targets PE (0603888C) beginning in FY09.*

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<p><i>Based on FY08 Congressional direction, the SBX program content, including operations and sustainment, previously planned for FY08 in the Midcourse PE (0603882C) has moved to the new SBX PE (0603907C). Beginning in FY09, SBX content will be captured under the BMD Sensors PE (0603884C).</i></p> <p><b><u>A. Mission Description and Budget Item Justification</u></b></p> <p>BMD Systems Engineering provides System Description Documents and System Specifications for elements to design, build, integrate and test BMDS components. These products optimize performance at the system level and further ensure that the assessment of the designed BMD System is based on sufficient ground and flight testing. Compliance of GMD to BMD System level requirements is monitored in a series of requirements and design reviews both at the system and element levels.</p> <p>MDA has a set of Unifying Missile Defense Functions (UMDFs), which increase the effectiveness of the BMD System, i.e. probably of engagement success, increase in defended area and raid size capacity, etc. through the integration of MDA developed capabilities. These UMDF efforts are Sensor Registration (reporting of sensor errors/biases), Correlation (ensuring the information from multiple sensors seeing a threat relates to the same object), System Track (creating a single engageable track of a threat from multiple reports provided by different land, sea, and space based multiple sensors), Discrimination (identifying object details to determine the target from debris or decoys), Battle Management (combining the best sensors and shooters to ensure the highest probability of a kill), Hit/Kill Assessment (determining if the target selected was destroyed after missile impact), and Communications (providing the worldwide connection of sensors and shooters to command authorities). UMDFs are implemented across the BMDS elements to create and utilize system level data and decisions that allow Combatant Commanders the ability to automatically and manually optimize sensor coverage and interceptor inventory to defend against all ranges of ballistic threats..</p> <p>Common threat engineering produces common and consistent adversary trajectory and signature data to enable Ballistic Missile Defense (BMD) System and sub-system concept and requirements, design, verification, and assessment. Common Threat data is contained in the Adversary Capability Document (ACD) and Adversary Data Packages (ADP) and drives BMDS ground tests, flight tests, digital simulations, and pre-mission analysis activities. It is also used to develop the BMD System Description Document and BMD System Specification.</p> <p>Modeling and simulation (M&amp;S) activities support all phases of GM development, including development of modifications to the Ground Systems and GBI Development, flight test missions, ground tests, wargames, exercises, and performance assessment. Models and simulations are tailored to the specific need of a component in its current phase of development, ranging from low-to-medium fidelity analyses supporting concept definition studies, to high-fidelity models used to support engineering development, or testing and are integrated into the BMD Digital Simulations Architecture. Digital simulations support Program Assessment events, which provide critical system level performance data relative to all elements,</p>		

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<p>the system engineer, M&amp;S developers, OTA and Warfighter. Further, the M&amp;S Digital tools are accredited for each application and for specific objectives; tools are put through a rigorous verification and validation process, reviewing coding and specifications, and comparing analyses against actual flight test results. Planning support is required to assist in the V&amp;V plan development, test execution, analysis for V&amp;V reports and program office M&amp;S certification. The Digital End-to-End simulation of the BMDS requires a PA Integrated V&amp;V Plan and Report (at both element and system level), and a PA-system level Accreditation Plan and Report.</p> <p><b><u>A.1 System Element Description</u></b></p> <p>The Ground-Based Midcourse Defense (GMD) element is a key component of the Ballistic Missile Defense System (BMDS), providing Combatant Commanders capability to engage ballistic missiles in the midcourse phase of flight. This phase, compared to boost or terminal, allows significant time for sensor viewing from multiple platforms and thus provides multiple engagement opportunities for hit-to-kill interceptors. GMD consists of multiple sensors, a complex communications system, fire control capability, and ground-based interceptors.</p> <p>The GMD program is described as follows:</p> <ul style="list-style-type: none"><li>• Capability Development (Project WX08) provides GMD support of BMDS system architecture developments, in particular, to provide a pervasive queuing with overhead IR sensors, with a focus on regional defense scenarios. This concept addresses the goals of enabling earlier interceptor commit and earlier intercepts.</li><li>• Block 1.0 (Project AX08) continues the development and fielding of capabilities to defend the U.S. from limited North Korean Long-Range Threats. The fielding of additional GBIs, integration of UEWRs and the SBX, and fielding of two additional IDTs in Block 1.0 broadens the area of coverage of the initial BMDS. Block 1.0 also incorporates simultaneous test and operations upgrades. Block 1.0 concludes in 2009.</li><li>• Block 3.0 (Project CX08) provides development and fielding of capabilities to expand defense of the U.S. to include limited Iranian long-range threats. These capabilities include an integrated testing of the multi-layered BMDS components, the fielding of upgraded GBIs, and improvement in the ability to engage evolving threats by testing and fielding enhanced discrimination algorithms.</li><li>• RDT&amp;E sustainment funding (Project XX08) provides for the operations and sustainment of GMD fielded capability. The GMD Prime contractor and subcontractors will provide monitoring, diagnostics and maintenance of the fielded GMD components. This effort includes the continued development and validation of maintenance procedures, analysis, repair parts stock levels, and 24/7 monitoring and diagnostics at Vandenberg AFB, Fort Greely, the Missile Defense Integration Operations Center (MDIOC), and across the nation-wide GMD Communication Network (GCN).</li></ul>		

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**A.2 System Element Budget Justification and Contribution to the Ballistic Missile Defense System (BMDS)**

The GMD element provides the capability to the Combatant Commanders to engage ballistic missiles in the midcourse phase of flight. The contribution of the GMD system is comprised of:

- U.S. Defense: Operational System Protecting the United States from long range nuclear ballistic missiles.
- Interceptors: On-going interceptor fielding, GBI emplacement, GBI maintenance and refurbishment, and the Exoatmospheric Kill Vehicle (EKV) transition to rate manufacturing.
- Fire Control and Communications: High availability of a fire control loop comprised of three fire control nodes inside a dedicated communications ring consisting of 20,000+ miles of terrestrial / submarine fiber, nine satellite communications (SATCOM) link.
- Infrastructure: Operational and support facilities at Fort Greely, Eareckson Air Station, Vandenberg AFB, Beale AFB, Schriever AFB, and Fylingdales, U.K.
- Physical security including fences, sensors, crash barriers, entry control and lighting.

**A.3 Major System Element Goals**

Continue ground and flight testing of Blocks 1.0 and 3.0 interceptors and components

- Continue to field the system at Vandenberg Air Force Base and Fort Greely, AK.
- Support and sustain the fielded system
- Complete development, fielding, and continue support of a Block 1 operational capability.
- Verify capability by operationally realistic testing
- Improve BMDS capability and robustness through continued development and integration
- Expand BMDS via increased ESGs and depth of inventory

**A.4 Major Events Schedule and Description**

Major Event	Project	Timeframe	Description
<b>Flight Test</b>			
<b>Flight Tests</b>			

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Major Event	Project	Timeframe	Description
FTX-03	AX08	4Q FY 2008	<ul style="list-style-type: none"> <li>Within an operationally representative multi-sensor BMDS framework (4 sensors on-line), perform all functions necessary to support an engagement solution against a dynamic lethal target scene with countermeasures launched. [Interdependency with Test and Targets PE (0603888C)]</li> </ul>
FTG-05	AX08	1Q FY 2009	<ul style="list-style-type: none"> <li>Within a BMDS framework, demonstrate the engagement of a target launched from the Kodiak Launch Complex using a GBI launched from VAFB and perform all functions to intercept the representative lethal object from a more complex target scene. [Interdependencies with Test and Targets PE (0603888C) and BMD Sensors PE(0603884C)]</li> </ul>
FTG-06	CX08	4Q FY 2009	<ul style="list-style-type: none"> <li>Within a BMDS Framework, demonstrate the engagement of a target launched from KLC with AN/SPY-1 providing initial track with SBX updates, using a GBI launched from VAFB executing a dogleg maneuver and performing all functions with a medium closing velocity to intercept the lethal object for a more complex target scene. [Interdependencies with Test and Targets PE (0603888C) and BMD Sensors PE(0603884C)]</li> </ul>
<b>European Upper Tier Capability Flight Test</b>			
BVT-01 [EC PE (0603911C)]	DX08	1Q FY 2010	<ul style="list-style-type: none"> <li>2-Stage Booster Verification Test [Interdependencies with European Capability PE (0603911C) and BMD European Interceptor Site PE (0603908C)]</li> </ul>
FTG-07 [EC PE (0603911C)]	DX08	3Q FY 2010	<ul style="list-style-type: none"> <li>Demonstrate 2-Stage Interceptor performance against a representative threat target based on European engagement timelines. [Interdependencies with European Capability PE (0603911C), BMD European Interceptor Site PE (0603908C), and Test and Targets PE (0603888C)]</li> </ul>
<b>Ground Test</b>			
<b>Integrated/Distributed Ground Tests</b>			
GT-199	CX08	3Q FY 2009	<ul style="list-style-type: none"> <li>Participate in Glory Trip 199 (GT-199), scheduled for 3Qtr FY09. GM participation includes GMD Fire Control (GFC) receiving and processing multi-sensor data and Weapon Task Plan (WTP) generation. [Interdependency with BMD Sensors PE(0603884C)]</li> </ul>
<b>Ground Test</b>			
<b>Integrated/Distributed Ground Tests</b>			
GTD-02	AX08	1Q FY 2008	<ul style="list-style-type: none"> <li>Assess BMDS ability to simultaneously execute multiple Block 1 Engagement Sequence Groups (ESG) using theater and strategic assets with Block 1 scenarios while using operational communications. [Interdependency with Test and Targets PE (0603888C)]</li> </ul>
GTI-03	AX08	3Q FY 2008	<ul style="list-style-type: none"> <li>Demonstrate BMDS ability to simultaneously execute multiple ESGs using theater and strategic assets with Block 1 scenarios and threats with projected fielded and developmental baselines at the end of CY2008. [Interdependency with Test and Targets PE (0603888C)]</li> </ul>

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
Major Event	Project	Timeframe	Description
Fast Shield	AX08	4Q FY 2008	<ul style="list-style-type: none"> <li>Characterize the BMDS capability and ensure warfighters are trained with a dual GFC Node BMDS system.</li> </ul>
GTX-03c	AX08	1Q FY 2009	<ul style="list-style-type: none"> <li>Demonstrate the engagement of an Intermediate Range Ballistic Missile (IRBM) target using a SM-3 interceptor and perform all functions to intercept the lethal object by exercising the SM-3 LOAN/TPY-2 (FBM) Engagement Sequence Group in accordance with the BMDS Integrated Build C for risk reduction of FTM-15. [Interdependency with Test and Targets PE (0603888C)]</li> </ul>
GTD-03	AX08	2Q FY 2009	<ul style="list-style-type: none"> <li>Demonstrate the readiness of the Ground-Based Midcourse Defense (GMD) Block 6 Final Capability upgrades for field integration and Ballistic Missile Defense System (BMDS) ground tests. [Interdependency with Test and Targets PE (0603888C)]</li> </ul>
Fast Shield II	CX08	2Q FY 2009	<ul style="list-style-type: none"> <li>Characterize the BMDS capability and ensure warfighters are trained with a dual GFC Node BMDS system.</li> </ul>
GTI-04	CX08	2Q FY 2010	<ul style="list-style-type: none"> <li>Assess BMDS ability to simultaneously execute multiple ESGs using theater and strategic assets with BMDS Integrated Build C scenarios and threats with the projected fielded and developmental baselines at the end of calendar year 2009. [Interdependency with Test and Targets PE (0603888C)]</li> </ul>
GTD-04	CX08	3Q FY 2010	<ul style="list-style-type: none"> <li>Demonstrate the capability of the BMDS to simultaneously execute multiple ESGs using both theater and strategic assets against Integrated Build C scenarios and threats with the projected fielded and developmental baselines at the end of calendar year 2009, while using operational BMDS communications, and crews. [Interdependency with Test and Targets PE (0603888C)]</li> </ul>
<b>Delivery</b>			
<b>Interceptor Fleet Management</b>			
GBI Refurbishments	AX08	4Q FY 2008	<ul style="list-style-type: none"> <li>Refurbishment consists of design enhancements on a select number of interceptors that would improve interceptor reliability and performance.</li> </ul>
GBI Refurbishments	CX08	3Q FY 2009	<ul style="list-style-type: none"> <li>Refurbishment consists of design enhancements on a select number of interceptors that would improve interceptor reliability and performance.</li> </ul>
<b>Ground Based Interceptors (GBI)</b>			
GBIs 25-26	AX08	1Q FY 2009	<ul style="list-style-type: none"> <li>GBI Deliveries</li> </ul>
GBIs 27-30	AX08	4Q FY 2009 - 1Q FY 2010	<ul style="list-style-type: none"> <li>GBI Deliveries.</li> </ul>
GBIs 31-34	CX08	2Q FY 2010 - 3Q FY 2010	<ul style="list-style-type: none"> <li>GBI deliveries and emplacements to replace older GBI inventory</li> </ul>
GBIs 35-38	CX08	4Q FY 2010	<ul style="list-style-type: none"> <li>GBI deliveries and emplacements to replace older GBI inventory</li> </ul>
GBI Sub-Assemblies (39-43)	CX08	4Q FY 2010	<ul style="list-style-type: none"> <li>GBI major sub-assemblies (EKVs, Boost Stacks, BAMs) for rotation and fleet sustainment</li> </ul>
GBI 44 (for EIS Testing)	CX08	4Q FY 2009	<ul style="list-style-type: none"> <li>Deliver test GBI to support EIS testing (44) [Funded by BMD European Interceptor Site PE (0603908C)]</li> </ul>
			<ul style="list-style-type: none"> <li></li> </ul>

MDA Exhibit R-2 (PE 0603882C)

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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Major Event	Project	Timeframe	Description
<b>Flight Test Interceptors</b>			
FTG-05 GBI	AX08	1Q FY 2009	• GBI for FTG-05
FTG-06 GBI	AX08	4Q FY 2009	• GBI for FTG-06
FTG-08 GBI	CX08	4Q FY 2010	• GBI for FTG-08
<b>Ground Systems</b>			
GMD Fire Control 6B/CLE 4.1	AX08	4Q FY 2009	• GMD Fire Control 6B/CLE 4.1
<b>Contract Activity</b>			
<b>Performance Based Logistics</b>			
Acquisition Strategy; Supportability and Sustainability	XX08	1Q FY 2009 - 2Q FY 2009	• Review Acquisition Strategy and develop operating concepts for support and sustainment of weapons system using PBL.
Government Request for Proposal Development	XX08	3Q FY 2009 - 4Q FY 2009	• Develop and publish solicitation for PBL contract action.
Solicitation and Evaluations	XX08	1Q FY 2010 - 2Q FY 2010	• Publish solicitation; source selection evaluation team review, analyze, and assess all contract proposals.
Source Selection	XX08	3Q FY 2010 - 4Q FY 2010	• Source selection evaluation team conduct best and final evaluations.

<b>B. Program Change Summary</b>	FY 2008	FY 2009	FY 2010	FY 2011
Previous President's Budget (FY2009 PB)	2,243,213	2,076,662	1,748,068	
Current President's Budget (FY2010 PB)	2,198,664	1,507,481	982,922	
Total Adjustments	-44,549	-569,181	-765,146	
Congressional Program Reductions	0	-569,181	0	
Congressional Rescissions	0	0	0	
Total Congressional Increases	0	0	0	
Total Reprogrammings	-4,905	0	0	
SBIR/STTR Transfer	-39,644	0	0	
Adjustments to Budget Years	0	0	-765,146	

FY08 decrease includes SBIR/STTR transfer of \$40 million and reprogramming of \$5 million.

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<p>FY09 Congressional specific program adjustments include transfer of \$363 million to the new European Interceptor Site PE (0603908C), transfer of \$27.1 million to the new BMD European Communications Support PE (0603912C), transfer of \$104 million to the Targets and Test PE (0603888C), a reduction of \$110 million to GM block 4, addition of \$40 million for GMD Upgrades and Enhancements and a reduction of \$5 million for Congressional undistributed adjustments .</p>		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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COST (\$ in Thousands)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
WX08 GM Capability Development	0	0	3,855					
RDT&E Articles Qty	0	0	0					

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

Project WX08 funds GMD support of BMDS system architecture developments, in particular, to provide a pervasive queuing with overhead IR sensors, with a focus on regional defense scenarios. This concept addresses the goals of enabling earlier interceptor commit and earlier intercepts.

**B. Accomplishments/Planned Program**

	FY 2008	FY 2009	FY 2010	FY 2011
BMDS Architecture	0	0	3,855	
RDT&E Articles (Quantity)	0	0	0	

FY10 Planned Program:

- Determine and characterize Overhead Persistent Infrared (OPIR) interface requirements,
- Execute initial development of regionally-tailored OPIR processing and connectivity; assess for performance via simulation.

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>May 2009</b>
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**C. Other Program Funding Summary**

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Total Cost
PE 0603175C Ballistic Missile Defense Technology	106,437	119,308	109,760						-
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,034,478	956,686	719,465						-
PE 0603883C Ballistic Missile Defense Boost Defense Segment	503,475	400,751	186,697						-
PE 0603884C Ballistic Missile Defense Sensors	574,231	777,693	636,856						-
PE 0603886C Ballistic Missile Defense System Interceptors	330,874	385,493	0						-
PE 0603888C Ballistic Missile Defense Test and Targets	619,137	919,956	966,752						-
PE 0603890C Ballistic Missile Defense Enabling Programs	416,937	402,778	369,145						-
PE 0603891C Special Programs - MDA	193,157	175,712	301,566						-
PE 0603892C Ballistic Missile Defense Aegis	1,126,337	1,113,655	1,690,758						-
PE 0603893C Space Tracking & Surveillance System	226,499	208,923	180,000						-
PE 0603894C Multiple Kill Vehicle	223,084	283,481	0						-
PE 0603895C BMD System Space Program	16,237	24,686	12,549						-
PE 0603896C BMD C2BMC	439,997	288,287	340,014						-
PE 0603897C BMD Hercules	51,387	55,764	48,186						-
PE 0603898C BMD Joint Warfighter Support	45,400	69,743	60,921						-
PE 0603904C Missile Defense Integration & Operations Center (MDIOC)	77,102	106,040	86,949						-
PE 0603906C Regarding Trench	1,945	2,968	6,164						-
PE 0603907C Sea Based X-Band Radar (SBX)	155,244	146,895	174,576						-
PE 0603908C BMD Europ Intercep Site	0	362,007	0						-
PE 0603909C BMD Europ Midcourse Radar	0	76,537	0						-
PE 0603911C BMD European Capability	0	0	50,504						-
PE 0603912C BMD European Comm Support	0	27,008	0						-
PE 0603913C Israeli Cooperative	0	0	119,634						-
PE 0605502C Small Business Innovative Research BMDO	137,409	0	0						-
PE 0901585C Pentagon Reservation	5,971	19,667	19,709						-
PE 0901598C Management Headquarters - MDA	83,907	81,174	57,403						-

*Note: The Ballistic Missile Defense System (BMDS) is an integrated, interoperable, global defense system. The programs which comprise the BMDS are interdependent.*

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<p><b><u>D. Acquisition Strategy</u></b></p> <p>The OPIR development will be accomplished by a cooperative program between MDA Elements using a performance based approach that ties program approval decisions to knowledge point accomplishment associated with incorporating advanced sensors to achieve OPIR track utilization including regional assets. The program will use existing MDA FFRDC, SETA and other agency contracts.</p>		

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>May 2009</b>
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<b>I. Product Development Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>BMDS Architecture</b>										
OPIR Development	C/Various	To be Competed among Industry	0	0	N/A	3,855	N/A			3,855
Subtotal Product Development			0	0		3,855				3,855

**Remarks**

<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>BMDS Architecture</b>										
Subtotal Support Costs			0	0		0				0

**Remarks**

<b>III. Test and Evaluation Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>BMDS Architecture</b>										

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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation			0	0		0				0

**Remarks**

**IV. Management Services Cost ( \$ in Thousands )**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
Subtotal Management Services										

**Remarks**

Project Total Cost			0	0		3,855				3,855
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**Remarks**

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**Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile**

Date  
**May 2009**

**APPROPRIATION/BUDGET ACTIVITY**

**R-1 NOMENCLATURE**

**RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**

**0603882C Ballistic Missile Defense Midcourse Defense Segment**

Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Development</b>																																				
Establish Roles/Responsibilities between MDA Elements								▲																												
Establish Comm Infrastructure					▲	—	▲																													
Participate in Tests of Opportunity							▲	—	▲																											
Upgrade H/W &S/W Framework									▲	—	▲																									
Integrate Improved OPIR Sensors									▲	—	▲	—	▲	—	▲																					
Begin Construction of M&S Environment											▲	—	▲	—	▲																					
Demonstate Cue for Launch-On Remote with OPIR Data													▲	—	▲																					

**Legend**

▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	☆	Milestone Decision (planned)
◆	Element Test (complete)	◇	Element Test (planned)
▼	System Level Test (complete)	▽	System Level Test (planned)
▲—▲	Complete Activity	▲—▲	Planned Activity

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<b>Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail</b>						Date <b>May 2009</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>				
Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
<b>Development</b>								
Establish Roles/Responsibilities between MDA Elements		3Q						
Establish Comm Infrastructure		1Q-3Q						
Participate in Tests of Opportunity		3Q-4Q						
Upgrade H/W &S/W Framework		4Q	1Q-2Q					
Integrate Improved OPIR Sensors		4Q	1Q-4Q					
Begin Construction of M&S Environment			1Q-4Q					
Demonstrate Cue for Launch-On Remote with OPIR Data			3Q-4Q					

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>May 2009</b>		
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<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>				

COST (\$ in Thousands)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
AX08 Ground Based Midcourse Defense (GMD) Block 1.0	1,229,805	25,178	0					
RDT&E Articles Qty	2	7	0					

*Note:*  
Refer to the Program Buy/Delivery table for associated RDT&E articles.

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

Project AX08 provides funding for the development and fielding of additional assets and capability enhancements to the Ground-based Midcourse Program. These enhancements and activities include:

- Increase of available fielded assets to thirty GBIs (with associated ground hardware), five In-Flight Interceptor Communication System (IFICS) Data Terminals (IDTs), three GFC nodes, and five Defense Satellite Communications System (DSCS) terminals.
- Development and fielding of the Capability Enhancement-II (CE-II) kill vehicle, which addresses obsolescence issues and provides additional processor throughput to support system wide discrimination capabilities.
- Upgrades to Ground Systems hardware, software, and communications links that will include improvements for the warfighter, strong authentication, booster drop avoidance, simultaneous test and operations upgrades, and hardware upgrades to begin addressing obsolescence issues.
- Capability to conduct simultaneous test and operations of the GMD element.
- Continued integration and testing of sensors including Upgraded Early Warning Radars (UEWRs) at Beale AFB and Fylingdales, U.K., the Cobra Dane radar at Shemya, AK, and the Sea-Based X-Band Radar (SBX).
- Demonstration of additional Engagement Sequence Groups: launch and engage on Cobra Dane and UEWR; launch and engage on the Sea-based X-band Radar (SBX); launch and engage on the AN/SPY-1 Mod 1 radar; and launch and engage on the AN/TPY-2 (Search and Track) sensor.

**B. Accomplishments/Planned Program**

	FY 2008	FY 2009	FY 2010	FY 2011
Program Management	226,424	0	0	
RDT&E Articles (Quantity)	0	0	0	

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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This effort provides for the prime contractor and government management of the GMD program. Included in this effort is program and business management, program administration, technical and testing oversight, subcontractor management, verification of hardware and software development, quality/safety/mission assurance, integrated logistic support, and government manpower and infrastructure to develop, test and sustain the GMD system and components.

**FY08 Accomplishments:**

- Provided management for GMD program quality assurance, manufacturing and mission assurance, safety assurance and configuration management.
- Provided government and contractor program staff and infrastructure for the overall management of the GMD program.
- Provided technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities.
- Provided contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight.
- Ensured GMD program compliance with internal and external direction, policies, and regulations.
- Provided Integrated Logistics Support for the GMD program through a Performance Based Logistics approach.

	FY 2008	FY 2009	FY 2010	FY 2011
Element Engineering and Integration	139,219	0	0	
RDT&E Articles (Quantity)	0	0	0	

GMD Element Engineering and Integration (EE&I) provides systems engineering and integration essential for the development and fielding of the functional components of the GMD segment of the BMDS. Included in this effort are concept definition, requirements and interfaces, system design, integration, test planning and verification. Key products are development and maintenance of the technical baseline and critical engineering processes for implementation and delivery of an integrated GMD element capability.

**FY08 Accomplishments:**

- Continued software management and specialty engineering.

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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- Continued software verification and validation.
- Continued modeling and simulation development.
- Continued system analyses, integration, and verification.
- Supported integrated ground tests and specialty testing.
- Conducted planning, pre- and post-flight test analyses.
- Continued development of discrimination capabilities.
- Continued Fort Greely power enhancements.
- Initiated system engineering and requirements development and site design efforts for Build D and supported UMDF.

	FY 2008	FY 2009	FY 2010	FY 2011
Ground Systems	140,775	23,302	0	
RDT&E Articles (Quantity)	0	2	0	

The GMD Ground Systems (GS) Component enables control and operation of the GMD Element as part of the BMDS. GS consists of the GMD Fire Control (GFC), Test Exerciser (TEx) External Systems Interface (ESI), (1) GMD Communications Network (GCN),(2) In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT), Launch site components (silos, SIVs), Launch Support Systems (Command Launch Equipment (CLE) and Launch Support Equipment).

**FY08 Accomplishments:**

- Expanded and improved ground systems capabilities
  - Continued development and fielding of GMD Simultaneous Test and Operations (STO) Phase II and III upgrades to allow warfighters to train, test, and/or operate the system on the same console.
  - Initiated fielding of GMD Fire Control software version 6B which improves fault detection/fault isolation, adds ability to designate first stage booster drop exclusion zones, and incorporates Warfighter requested changes to GFC display.
  - Completed development of Command Launch Equipment Software Build 4.1, which includes the support of increased GBI's, Unit Reference Number changes, and Certification and Accreditation (C&A) changes.
  - Increased missile defense capability with the completion of five (5) additional silos and associated launch support equipment at Fort Greely and the construction and installation of a fourth operational silo at Vandenberg AFB.

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>May 2009</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>	

FY09 Planned Program:

- Continue to expand and improve ground systems capabilities
  - Complete fielding of GMD Fire Control software version 6B which improves fault detection and isolation, and adds ability to designate first stage booster drop exclusion zones.
  - Complete fielding of Command Launch Equipment (CLE) Hardware and Software version 4.1 to mitigate obsolescence and support an increased number of Ground Based Interceptors (GBIs).
  - Continue fielding, integration and testing of GMD Simultaneous Test and Operations (STO) Phase II upgrades to accommodate initial STO.
  - Complete Installation and Check-Out of 4th Operational Silo at VAFB w/ additional capability to support Flight Test

	FY 2008	FY 2009	FY 2010	FY 2011
Element Test and Evaluation	250,199	0	0	
RDT&E Articles (Quantity)	0	0	0	

GMD Test and Evaluation plans and executes ground and flight tests to evaluate and verify GMD system performance and collect data to anchor models and simulations. GMD Test and Evaluation uses significant test infrastructure (ground-test facilities, ranges, sensors and instrumentation resources) to support measurement of system performance for all GMD element components. GMD Test and Evaluation integrates developmental and operational test planning, shares test resources, collects and assesses test data, collectively resolves test issues, minimizes the duplication of test resources and the time required to execute required testing, and supports BMDS level test and evaluation.

FY08 Accomplishments:

- Continued to test GMD capabilities:
  - Conducted a combined GTG-06-3 (also known as GTG-03a) /GTI-03 test event in 2nd through 3rd Qtr FY08. This test successfully assessed the BMDS ability to simultaneously execute multiple ESGs using Block 1 scenarios and threats.
  - Successfully completed FTX-03 in July 2008; this test restructured FTG-04 as a non-intercept, multi-sensor integration flight test event executed within an operationally representative multi-sensor BMDS framework (4 on-line sensors -- Aegis, AN/TPY-2, SBX, and UEWR (Beale)) against a target scene with countermeasures launched from the Kodiak Launch complex.

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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- Completed preliminary planning and integration activities for GT-06-4 (A, B), which has merged with the BMDS level distributed ground test GTD-03 scheduled for 2Qtr FY09. This test will demonstrate readiness of the Ground-Based Midcourse Defense (GMD) Block 1.0 final capability upgrades for field integration.
- Conducted Pre-Mission test planning for GTX-03c, to be conducted 1st Qtr FY09, which will demonstrate GMD communications with external sensors (SBIRS, AN/TPY-2 [FBM], and Aegis BMD) as well as GMD communications with C2BMC in a distributed hardware-in-the-loop environment.
- Performed Pre-Mission Test planning, design, and scheduling for FTG-05, to be conducted 1st Qtr FY09. With four on-line sensors, this test will demonstrate the engagement of a target launched from Kodiak Launch Complex by a GBI launched from VAFB.
  - Critical Engagement Criteria (CECs) = None
  - Empirical Measurement Events (EMEs) = 2

	FY 2008	FY 2009	FY 2010	FY 2011
Ground Based Interceptor	473,188	1,876	0	
RDT&E Articles (Quantity)	2	5	0	

During Block 1.0, the GBI program continues the development of Capability Enhancement-II (CE-II) Exoatmospheric Kill Vehicle (EKV) and booster technologies. The CE-II EKV will be demonstrated as part of the block improvement process in both the ground and flight test programs. This enhancement addresses EKV obsolescence issues and provides additional processor throughput to support system wide advanced discrimination capabilities. Ultimately the Block 1.0 GBI program will end with thirty (30) 3-stage configuration Ground Based Interceptors (GBIs) fielded. Development of this capability will enable the U.S. to defend itself from limited North Korean long-range threats.

**FY08 Accomplishments:**

- Expanded and improved interceptor fleet:
  - Continued acquisition of six (6) GBIs (Fielding).
  - Completed refurbishment of two (2) GBIs.

**FY09 Planned:**

- Continue to expand and improve the interceptor fleet:

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>May 2009</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>	
<ul style="list-style-type: none"><li>• Complete acquisition of four (4) GBIs, and continue acquisition of two (2) GBIs (Fielding).</li><li>• Complete acquisition of one (1) GBI (Flight Test).</li></ul> <p>FY10 Planned:</p> <ul style="list-style-type: none"><li>• Complete delivery of final two (2) Block 1 GBIs (Fielding).</li></ul>		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>May 2009</b>			
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<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>					

**C. Other Program Funding Summary**

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Total Cost
PE 0603175C Ballistic Missile Defense Technology	106,437	119,308	109,760						-
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,034,478	956,686	719,465						-
PE 0603883C Ballistic Missile Defense Boost Defense Segment	503,475	400,751	186,697						-
PE 0603884C Ballistic Missile Defense Sensors	574,231	777,693	636,856						-
PE 0603886C Ballistic Missile Defense System Interceptors	330,874	385,493	0						-
PE 0603888C Ballistic Missile Defense Test and Targets	619,137	919,956	966,752						-
PE 0603890C Ballistic Missile Defense Enabling Programs	416,937	402,778	369,145						-
PE 0603891C Special Programs – MDA	193,157	175,712	301,566						-
PE 0603892C Ballistic Missile Defense Aegis	1,126,337	1,113,655	1,690,758						-
PE 0603893C Space Tracking & Surveillance System	226,499	208,923	180,000						-
PE 0603894C Multiple Kill Vehicle	223,084	283,481	0						-
PE 0603895C BMD System Space Program	16,237	24,686	12,549						-
PE 0603896C BMD C2BMC	439,997	288,287	340,014						-
PE 0603897C BMD Hercules	51,387	55,764	48,186						-
PE 0603898C BMD Joint Warfighter Support	45,400	69,743	60,921						-
PE 0603904C Missile Defense Integration & Operations Center (MDIOC)	77,102	106,040	86,949						-
PE 0603906C Regarding Trench	1,945	2,968	6,164						-
PE 0603907C Sea Based X-Band Radar (SBX)	155,244	146,895	174,576						-
PE 0603908C BMD Europ Intercep Site	0	362,007	0						-
PE 0603909C BMD Europ Midcourse Radar	0	76,537	0						-
PE 0603911C BMD European Capability	0	0	50,504						-
PE 0603912C BMD European Comm Support	0	27,008	0						-
PE 0603913C Israeli Cooperative	0	0	119,634						-
PE 0605502C Small Business Innovative Research BMDO	137,409	0	0						-
PE 0901585C Pentagon Reservation	5,971	19,667	19,709						-
PE 0901598C Management Headquarters – MDA	83,907	81,174	57,403						-

*Note: The Ballistic Missile Defense System (BMDS) is an integrated, interoperable, global defense system. The programs which comprise the BMDS are interdependent.*

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	

**D. Acquisition Strategy**

GMD will continue to follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, development, and evolutionary acquisition through the use of MDA's new block structure and incremental development. The Agency has structured the missile defense acquisition strategy to continually provide needed upgrades to the GMD system components within the new block structure and funding availability. This process minimizes the risk of obsolescence, provides opportunities for standards updates, and allows decision makers to make informed trades between cost, schedule, and performance while exploring operational and technological possibilities. This developmental approach has been enhanced within the GMD program by additional test infrastructure, improved test management, and improved models and simulations that have enhanced GMD's ability to test in more complex and operationally realistic test environments earlier than the standard acquisition process.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment					
<b>I. Product Development Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>Element Engineering and Integration</b>										
Systems Engineering & Integration	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	121,769	0	N/A	0	N/A			121,769
<b>Ground Systems</b>										
Ground Systems	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/VA	153,644	23,302	N/A	0	N/A			176,946
<b>Element Test and Evaluation</b>										
Element Test & Evaluation	SS/CPAF	Boeing/ AL/AK/AZ/COO A/CO/TX/VA	119,925	0	N/A	0	N/A			119,925
<b>Ground Based Interceptor</b>										
Ground Based Interceptor	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/UT/VA	274,274	1,876	1/2Q	0	N/A			276,150
Subtotal Product Development			669,612	25,178		0				694,790
<b>Remarks</b>										

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>Program Management</b>										
SPT HSV	C/CPAF	CSC/ AL	28,200	0	N/A	0	N/A			28,200
SPT HSV (SETAC)	C/CPAF	BAE/ AL	1,425	0	N/A	0	N/A			1,425
	MIPR	MDA/ AL/VA	11,400	0	N/A	0	N/A			11,400
	MIPR	Various/ AL/VA	10,267	0	N/A	0	N/A			10,267
JNIC (GML)	SS/CPAF	JNIC/ CO	5,690	0	N/A	0	N/A			5,690
Information Technology	SS/CPFF	SAIC/ AL	8,711	0	N/A	0	N/A			8,711
	SS/CPFF	BAE Systems/ AL	2,060	0	N/A	0	N/A			2,060
	MIPR	AMCOM	618	0	N/A	0	N/A			618
	MIPR	SMCD/ AL	515	0	N/A	0	N/A			515
	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	105,895	0	N/A	0	N/A			105,895
Manufacturing	SS/CPAF	BAE Systems/ AL	2,822	0	N/A	0	N/A			2,822
	MIPR	AMRDEC/ AL	456	0	N/A	0	N/A			456
	SS/CPAF	TSI/ AL	62	0	N/A	0	N/A			62

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/Oblg Date	FY 2010 Cost	FY 2010 Award/Oblg Date	FY 2011 Cost	FY 2011 Award/Oblg Date	Total Cost
Program Management	MIPR	MDA/ AL/VA	25,993	0	N/A	0	N/A			25,993
Information Technology	MIPR	NSA/ Various	3,193	0	N/A	0	N/A			3,193
DFW World-wide Support	MIPR	MDA DFW/ AL	19,000	0	N/A	0	N/A			19,000
	MIPR	Various/ Various	117	0	N/A	0	N/A			117
<b>Element Engineering and Integration</b>										
	MIPR	AMCOM/ AL	4,723	0	N/A	0	N/A			4,723
	C/CPAF	EG&G/ VA	2,381	0	N/A	0	N/A			2,381
	FFRDC	Johns Hopkins/ MD	3,155	0	N/A	0	N/A			3,155
	FFRDC	MIT Lincoln Labs/ MA	1,428	0	N/A	0	N/A			1,428
	FFRDC	MITRE/ MA	2,857	0	N/A	0	N/A			2,857
	C/CPAF	TSI/ AL	1,552	0	N/A	0	N/A			1,552
	MIPR	JNIC/ CO	1,666	0	N/A	0	N/A			1,666
	MIPR	NSWC/ VA	2,381	0	N/A	0	N/A			2,381
	MIPR	Sandia/ NM	476	0	N/A	0	N/A			476

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
	C/CPAF	Various/ AL/NM/VA	353	0	N/A	0	N/A			353
EE&I	C/CPAF	CSC/ AL	115	0	N/A	0	N/A			115
	C/CPAF	BAE/ AL	77	0	N/A	0	N/A			77
	C/CPAF	Aerospace/ AL	229	0	N/A	0	N/A			229
	C/CPAF	IntelCorp/ AL	555	0	N/A	0	N/A			555
	MIPR	SMDC STEPAL/ AL	635	0	N/A	0	N/A			635
	C/CPAF	CSC LTAP/ AL/VA	1,190	0	N/A	0	N/A			1,190
SPT HSV	C/CPAF	CSC/ AL	21,177	0	N/A	0	N/A			21,177
<b>Ground Systems</b>										
	FFRDC	MITRE/ AL	324	0	N/A	0	N/A			324
	C/FP	TSI/ AL	2,277	0	N/A	0	N/A			2,277
	C/CPFF	CSC/ AL	4,639	0	N/A	0	N/A			4,639
	MIPR	USACE/ AL	810	0	N/A	0	N/A			810
	MIPR	AMRDEC/ AL	540	0	N/A	0	N/A			540

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/Oblg Date	FY 2010 Cost	FY 2010 Award/Oblg Date	FY 2011 Cost	FY 2011 Award/Oblg Date	Total Cost
	C/CPFF	L3 Communications/ AL	893	0	N/A	0	N/A			893
	C/CPFF	TSI/ AL	664	0	N/A	0	N/A			664
Facilities Construction	MIPR	USACE/ AK	0	0	N/A	0	N/A			
SPT HSV	C/CPAF	CSC/ AL	4,484	0	N/A	0	N/A			4,484
<b>Ground Based Interceptor</b>										
	SS/FP	BAE Systems/ AL	3,037	0	N/A	0	N/A			3,037
	SS/FP	TSI/ AL	740	0	N/A	0	N/A			740
	MIPR	AMCOM/ AL	557	0	N/A	0	N/A			557
	MIPR	Various	10	0	N/A	0	N/A			10
Subtotal Support Costs			290,349	0		0				290,349
<b>Remarks</b>										

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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<b>III. Test and Evaluation Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>Element Test and Evaluation</b>										
	MIPR	SMDC/ AL	804	0	N/A	0	N/A			804
	MIPR	AMCOM/ NM	687	0	N/A	0	N/A			687
	MIPR	NAVSEA/ MD	609	0	N/A	0	N/A			609
	MIPR	DISA/ AL	1,331	0	N/A	0	N/A			1,331
	MIPR	Aero Systems Center, Kirtland/ NM	1,193	0	N/A	0	N/A			1,193
	MIPR	US Army Space CMD, Peterson AFB/ CO	1,577	0	N/A	0	N/A			1,577
	MIPR	VAFB/ CA	3,496	0	N/A	0	N/A			3,496
	MIPR	RTTC/ AL	487	0	N/A	0	N/A			487
	MIPR	PRST/ HI	1,769	0	N/A	0	N/A			1,769
	C/CPFF	Gray/ AL	668	0	N/A	0	N/A			668
	C/CPFF	SMC/ CA	214	0	N/A	0	N/A			214
	C/CPFF	IEC/ CA	513	0	N/A	0	N/A			513

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
	MIPR	Maritime Adm/ AL	755	0	N/A	0	N/A			755
	MIPR	NAWCWD/ HI	855	0	N/A	0	N/A			855
<b>Targets</b>			93,947	0	N/A	0	N/A			93,947
GMD T&E	MIPR	VAFB/ CA	3,299	0	N/A	0	N/A			3,299
HSV SPT	C/CPAF	CSC/ AL	18,070	0	N/A	0	N/A			18,070
<b>Subtotal Test and Evaluation</b>			130,274	0		0				130,274

**Remarks**

**IV. Management Services Cost ( \$ in Thousands )**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>Subtotal Management Services</b>										

**Remarks**

Project Total Cost			1,090,235	25,178		0				1,115,413
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**Remarks**

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Flight Tests</b>																																				
FTX-03				◆																																
FTG-05					◆																															
<b>Integrated/Distributed Ground Tests</b>																																				
GTD-02	▼																																			
GTI-03			▼																																	
Fast Shield				▲																																
GTX-03c								▼																												
GTD-03								▼																												
<b>Flight Test Interceptors</b>																																				
FTG-05 GBI								▲																												
FTG-06 GBI												▲																								
<b>Interceptor Fleet Management</b>																																				

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	★	Milestone Decision (planned)
◆	Element Test (complete)	◆	Element Test (planned)
▼	System Level Test (complete)	▼	System Level Test (planned)
▲▼	Complete Activity	▲▼	Planned Activity

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Interceptor Fleet Management</b>																																				
GBI Refurbishments				▲																																
<b>Ground Systems</b>																																				
GMD Fire Control 6B/CLE 4.1								△																												
VAFB 4th Operational Silo								△																												
<b>Ground Based Interceptors (GBI)</b>																																				
GBIs 25-26				▲																																
GBIs 27-30								△=△																												

**Legend**

<table border="0"> <tr><td>▲</td><td>Significant Event (complete)</td></tr> <tr><td>★</td><td>Milestone Decision (complete)</td></tr> <tr><td>◆</td><td>Element Test (complete)</td></tr> <tr><td>▼</td><td>System Level Test (complete)</td></tr> <tr><td>▲=▲</td><td>Complete Activity</td></tr> </table>	▲	Significant Event (complete)	★	Milestone Decision (complete)	◆	Element Test (complete)	▼	System Level Test (complete)	▲=▲	Complete Activity	<table border="0"> <tr><td>▲</td><td>Significant Event (planned)</td></tr> <tr><td>☆</td><td>Milestone Decision (planned)</td></tr> <tr><td>◇</td><td>Element Test (planned)</td></tr> <tr><td>▽</td><td>System Level Test (planned)</td></tr> <tr><td>△=△</td><td>Planned Activity</td></tr> </table>	▲	Significant Event (planned)	☆	Milestone Decision (planned)	◇	Element Test (planned)	▽	System Level Test (planned)	△=△	Planned Activity
▲	Significant Event (complete)																				
★	Milestone Decision (complete)																				
◆	Element Test (complete)																				
▼	System Level Test (complete)																				
▲=▲	Complete Activity																				
▲	Significant Event (planned)																				
☆	Milestone Decision (planned)																				
◇	Element Test (planned)																				
▽	System Level Test (planned)																				
△=△	Planned Activity																				

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
<b>Flight Tests</b>								
FTX-03	4Q							
FTG-05		1Q						
<b>Integrated/Distributed Ground Tests</b>								
GTD-02	1Q							
GTI-03	3Q							
Fast Shield	4Q							
GTX-03c		1Q						
GTD-03		2Q						
<b>Flight Test Interceptors</b>								
FTG-05 GBI		1Q						
FTG-06 GBI		4Q						
<b>Interceptor Fleet Management</b>								
GBI Refurbishments	4Q							
<b>Ground Systems</b>								
GMD Fire Control 6B/CLE 4.1		4Q						
VAFB 4th Operational Silo		4Q						
<b>Ground Based Interceptors (GBI)</b>								
GBIs 25-26		1Q						
GBIs 27-30		4Q	1Q					
For all BMDS Level Test Schedule information, please refer to the BMDS Level Test Schedule tab								

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>May 2009</b>		
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<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>				

COST (\$ in Thousands)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
CX08 Ground Based Midcourse Defense (GMD) Block 3.0	451,635	1,152,057	764,976					
RDT&E Articles Qty	5	14	6					

*Note:*  
Refer to the Program Buy/Delivery table for associated RDT&E articles.

*GBI 44 was reallocated in FY08 for acceleration of the 2-stage GBI flight test program. [Interdependency by BMD European Interceptor Site PE (0603908C)] This GBI became interceptor for BVT-01.*

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

Project CX08 provides funding for the development and fielding of incremental component capability enhancements to Project AX08. These enhancements include:

- Continue acquisition of 14 GBIs (31-44).
  - Continue acquisition of 8 GBIs (31-38) for fielding at Ft. Greely, AK or Vandenberg AFB to replace older fielded GBIs.
  - Continue acquisition of 5 (39-43) sets of major sub-assemblies (EKVs, Boost Stacks, BAMs) for rotation and fleet sustainment.
  - Deliver 1 test GBI to support EIS testing (44) [Funded by BMD European Interceptor Site PE (0603908C)]
- Initiate conversion/refurbishment of older fielded GBIs to Flight Test configuration.
- The demonstration of additional Engagement Sequence Groups (ESGs), including launch and engage on Upgraded Early Warning Radars (UEWRs).
- Continue development of software upgrades for Ground Systems (GS) and the Ground Based Interceptor.
- Complete fabrication of 10 (Ten) Launch Site Components for Missile Field 2 and prepare for long term storage.
- Suspend Missile Field 2 and MF2 Mechanical Electrical Building construction. Secure MF2 infrastructure for long term completion delay.
- Continue Flight Test Program.
- Continue support to BMDS level ground testing.
- Continue models and simulations to verify system performance. Supports the BMDS Hardware-In-The-Loop (HWIL) Modeling and Simulation Program, which provides and integrates the BMDS system-level HWIL stimulation framework to support full-envelope BMDS ground test, flight test, and training events based upon Agency and warfighter needs.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date <b>May 2009</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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**B. Accomplishments/Planned Program**

	FY 2008	FY 2009	FY 2010	FY 2011
Ground Systems	189,020	217,000	91,986	
RDT&E Articles (Quantity)	5	10	1	

The GMD Ground Systems (GS) enable control and operation of the GMD Element as part of the BMDS. GS consists of the GMD Fire Control (GFC), Test Exerciser (TE<sub>x</sub>), and External Systems Interface (ESI), (1) GMD Communications Network (GCN), (2) In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT), Launch Support Systems, Launch Site Components (silos, SIVs) and Launch Support Systems (Command Launch Equipment (CLE)).

**FY08 Accomplishments:**

- Expanded and improved ground systems capabilities:
  - Continued construction of missile field 2 at Ft. Greely with installation of the first four (4) silos.
  - Completed installation and checkout of second Re-locatable In-Flight Interceptor Communication Data System Terminal (RIDT) at Vandenberg AFB.
  - Completed the development of software engineering releases, GFC v6B.289 and CLE 4.2 to support the testing of Near Term Discrimination Capability.
  - Completed requirements analysis and architecture design for CLE Software Build 4.3 (which accommodates BVT-1).
  - Conducted initial Elements Requirements Review (ERR) for GM and EKV software to incorporate the Unifying Missile Defense Functions (UMDF) for integrated BMDS architecture.

**FY09 Planned Program:**

- Continue improvement of Ground Systems capabilities:
  - Complete fabrication of 10 (Ten) Launch Site Components for Missile Field 2 and prepare for long term storage.
  - Suspend Missile Field 2 and MF2 Mechanical Electrical Building construction. Secure MF2 infrastructure for long term completion delay.
  - Develop software builds: for Fire Control (6C), add capability to transmit additional targeting data to the kill vehicle; for Command Launch Equipment (4.3).

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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- Continue the Ft. Greely Future Power Plant.

**FY10 Planned Program:**

- Continue improvement of Ground Systems capabilities:
  - Complete the Ft. Greely Future Power Plant.
  - Develop Software Builds for continued support of the Flight Test capability.
  - Transition Long Haul Communications to DISA

	FY 2008	FY 2009	FY 2010	FY 2011
Ground Based Interceptor	262,615	450,158	278,502	
RDT&E Articles (Quantity)	0	2	5	

During Block 3.0, the GBI development program continues the development of booster and CE-II EKV technologies to defend the U.S. from limited Iranian long-range threats. This demonstrated capability will enhance the BMDS against long and intermediate range ballistic missile attacks through fielding of eight (8) operational 3-stage interceptors to replace older fielded configuration for a total of thirty (30) operational assets. To aid in the accomplishment of this mission, the GBI program provides developmental assets for flight testing through conversion of older fielded GBIs to Flight Test configuration.

**FY08 Accomplishments:**

- Expanded and improved the interceptor fleet:
  - Accelerated the 2-Stage development program; initiated acquisition of one (1) 2-Stage GBI for the Booster Verification Test (BVT-1) now scheduled for FY09. (Continued 2-stage development and test transferred to EIS PE in FY09.)
  - Initiated development of the GBI Fleet Avionics Upgrade / Obsolescence Program.
  - Continued development of near term discrimination capability enhancements.
  - Continued acquisition of fourteen (14) GBIs.
  - Continued acquisition of one (1) GBI (3-Stage Flight Test) and initiated one (1) GBI (2-Stage Flight Test)
  - Continue acquisition of two (2) GBIs (2-Stage Ground Tests).

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>May 2009</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>R-1 NOMENCLATURE</b>	
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>	

**FY09 Planned Program:**

- Continue to expand and improve interceptor fleet:
  - Continue acquisition of 14 GBIs (31-44).
    - Continue acquisition of 8 GBIs for fielding (31-38) at Ft. Greely, AK or Vandenberg AFB to replace older fielded GBIs.
    - Continue acquisition of 5 (39-43) sets of major sub-assemblies (EKVs, Boost Stacks, BAMs) for rotation and fleet sustainment.
    - Deliver 1 test GBI to support EIS testing (44) [Funded by BMD European Interceptor Site PE (0603908C)]
  - Continue Development of a CEI and CEII Software EKV improvements to mitigate TPR 5920.
  - Continue development of one (1) GBI for the FY11 flight test program (FTG-04 will be used as primary vehicle for FTG-08)
  - Complete refurbishment of two (2) GBIs.

**FY10 Planned Program:**

- Continue to expand and improve interceptor fleet:
  - Complete fielding of 5 additional GBIs (31-35) at Ft. Greely, AK or Vandenberg AFB to replace older fielded GBIs.
  - Continue acquisition of 3 GBIs (36-38) to replace older fielded GBIs.
  - Continue acquisition of 5 (39-43) sets of major sub-assemblies (EKVs, Boost Stacks, BAMs) for rotation and fleet sustainment.
  - Initiate conversion of older fielded GBIs to Flight Test configuration

	FY 2008	FY 2009	FY 2010	FY 2011
Element Test and Evaluation	0	149,399	85,284	
RDT&E Articles (Quantity)	0	0	0	

MDA Element testing is based on an integrated, comprehensive, and phased test program. Element systems, subsystems, and components are tested early in development and are necessary prior to conducting BMD-System level testing. GM Element Level testing is funded as part of a developmental program and reflected in this Program Element (PE) submission. This PE also provides GM participation in the consolidated MDA-wide System Test Program and the resources for the, planning, design, execution, and management of GM in BMD System testing in accordance with the BMDS Test Policy, MDA Directive 3202.03 (Jan 09).

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<p>GMD Test and Evaluation plans and executes ground and flight tests to evaluate and verify GMD system performance and collect data to anchor models and simulations. GMD Test and Evaluation uses significant test infrastructure (ground-test facilities, ranges, sensors and instrumentation resources) to support measurement of system performance for all GMD element components. GMD Test and Evaluation integrates developmental and operational test planning, shares test resources, collects and assesses test data, collectively resolves test issues, minimizes the duplication of test resources and the time required to execute required testing, and supports BMDS level test and evaluation.</p> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"><li>• Continue to test GMD capabilities:<ul style="list-style-type: none"><li>• Conduct flight test FTG-06, with SBX using a GBI launch from VAFB against a target launched from Meck Island.<ul style="list-style-type: none"><li>• Critical Engagement Criteria (CECs) = 1</li><li>• Empirical Measurement Events (EMEs) = 4</li></ul></li><li>• Conduct planning for the GT-04 BMDS Ground Test Series, which begin in 2Qtr FY10. GTI-04 and GTD-04 will assess BMDS ability to simultaneously execute multiple engagement sequence groups.</li><li>• Participate in Glory Trip 199 (GT-199), scheduled for 3Qtr FY09. GM participation includes GMD Fire Control (GFC) receiving and processing multi-sensor data and Weapon Task Plan (WTP) generation.</li></ul></li></ul> <p>FY10 Planned Program:</p> <ul style="list-style-type: none"><li>• Continue to test system capabilities:<ul style="list-style-type: none"><li>• Conduct planning for the flight test FTG-08. To be conducted in 2Q FY11.<ul style="list-style-type: none"><li>• Critical Engagement Criteria (CECs) = None</li><li>• Empirical Measurement Events (EMEs) = 3</li></ul></li><li>• Support execution of BMDS GT-04 test campaign. GTI-04 and GTD-04 will assess BMDS ability to simultaneously execute multiple engagement sequence groups.</li><li>• FTG-07 (For reference: event executed under PE 0603911C)<ul style="list-style-type: none"><li>• Critical Engagement Criteria (CECs) = None</li></ul></li></ul></li></ul>		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>May 2009</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>		
<ul style="list-style-type: none"> <li>Empirical Measurement Events (EMEs) = 3</li> </ul>				
	FY 2008	FY 2009	FY 2010	FY 2011
Program Management	0	212,864	186,595	
RDT&E Articles (Quantity)	0	0	0	
<p>This effort provides for the prime contractor and government management of the GMD program. Included in this effort is program and business management, program administration, technical and testing oversight, subcontractor management, verification of hardware and software development, quality/safety/mission assurance, integrated logistic support, and government manpower and infrastructure to develop, test and sustain the GMD system and components.</p> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> <li>Provide management for GMD program quality assurance, manufacturing and mission assurance, safety assurance and configuration management.</li> <li>Provide government and contractor program staff and infrastructure for the overall management of the GMD program.</li> <li>Provide technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, configuration management and integration activities.</li> <li>Provide government and contractor program management for third missile field (MF2) at FGA.</li> <li>Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight.</li> <li>Ensure GMD program compliance with internal and external direction, policies, and regulations.</li> <li>Provide Integrated Logistics Support for the GMD program through a Performance Based Logistics approach.</li> <li>Designate and implement a ``Mission Assurance and Manufacturing Engineering Program`` to include Quality, Configuration Management, Manufacturing, Engineering, and Safety.</li> <li>Provide QSMA operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability.</li> <li>Provide QS infrastructure support for Agency operations.</li> </ul> <p>FY10 Planned Program:</p>				

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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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- Provide management for GMD program quality assurance, manufacturing and mission assurance, safety assurance and configuration management.
- Provide government and contractor program staff and infrastructure for the overall management of the GMD program.
- Provide technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, configuration management and integration activities.
- Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight.
- Ensure GMD program compliance with internal and external direction, policies, and regulations.
- Provide Integrated Logistics Support for the GMD program through a Performance Based Logistics approach.
- Implement a ``Mission Assurance and Manufacturing Engineering Program`` to include Quality, Configuration Management, Manufacturing, Engineering, and Safety.
- Provide QSMA operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability.
- Provide QS infrastructure support for Agency operations.

	FY 2008	FY 2009	FY 2010	FY 2011
Element Engineering and Integration	0	122,636	122,609	
RDT&E Articles (Quantity)	0	2	0	

GMD Element Engineering and Integration (EE&I) for Block 3 provides systems engineering and integration essential for the development and fielding of the GMD hardware and software. Included in this effort are concept definition, requirements and interfaces, system design, integration, test planning and verification. Key products are development and maintenance of the technical baseline and critical engineering processes for implementation and delivery of an integrated GMD element capability.

GMD will support the BMDS HWIL Modeling and Simulation Program by providing and integrating into the BMDS system-level HWIL single stimulation framework to support full-envelope BMDS ground test, flight test, and training events based upon Agency and warfighter needs.

GMD will support System Pre Flight predictions for each system level flight test using the test framework set up with the BMDS configuration for a particular flight test. This provides the confidence in Flight Test execution by predicting element performance and exercising element interfaces. This work is also used to proof out the construct of the flight test to ensure if the required data and data management plan will support System Post Flight

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<p>Reconstruction objectives. System Post Flight Reconstruction (SPFR) will use a HWIL and/or a Digital M&amp;S Environment to replicate the day of flight for the BMDS configuration, modified to represent the actual environmental conditions and target dynamics observed in flight. The results of this testing are used to increase confidence in the models and simulations by anchoring the results with emphasis on the critical engagement conditions (CECs) and empirical measurement events (EMEs) back to the real world event. SPFR is used for validation (anchoring) of models and simulations.</p> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"><li>• Support agency transition to a models and simulations based acquisition strategy. Support the phase I, II, and III strategy to identify critical engagement conditions (CECs) and empirical measurement events (EMEs) to anchor models and sims.</li><li>• Continue software management and specialty engineering.</li><li>• Continue software verification and validation.</li><li>• Complete GM modeling and simulation development (GMDSim 2.1 and Embedded Test 5.1).</li><li>• Support transition of Embedded Test to single stimulation framework.</li><li>• Continue system analyses, integration, and verification.</li><li>• Support integrated ground tests and specialty testing.</li><li>• Conduct planning, pre- and post-flight test analyses.</li><li>• Complete the integration and testing of engage/launch on UEWR (Thule).</li></ul> <p>FY10 Planned Program:</p> <ul style="list-style-type: none"><li>• Implement the agency transition to a models and simulations based acquisition strategy.</li><li>• Continue software management and specialty engineering.</li><li>• Continue software verification and validation.</li><li>• Continue BMDS modeling and simulation development.</li><li>• Support transition of Embedded Test to single stimulation framework.</li><li>• Continue system analyses, integration, and verification.</li><li>• Support integrated ground tests and specialty testing.</li><li>• Conduct planning, pre- and post-flight test analyses.</li><li>• Support system engineering effort enabling UMDF capabilities integration between GMD, C2BMC and Sensors.</li></ul>		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>May 2009</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>	
<ul style="list-style-type: none"><li>• Perform information assurance (IA) activities: conduct engineering and architectural analyses/studies; provide operations and maintenance for IA capabilities; maintain IA workforce training and certification; support certification and accreditation testing and analysis.</li></ul>		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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**C. Other Program Funding Summary**

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Total Cost
PE 0603175C Ballistic Missile Defense Technology	106,437	119,308	109,760						-
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,034,478	956,686	719,465						-
PE 0603883C Ballistic Missile Defense Boost Defense Segment	503,475	400,751	186,697						-
PE 0603884C Ballistic Missile Defense Sensors	574,231	777,693	636,856						-
PE 0603886C Ballistic Missile Defense System Interceptors	330,874	385,493	0						-
PE 0603888C Ballistic Missile Defense Test and Targets	619,137	919,956	966,752						-
PE 0603890C Ballistic Missile Defense Enabling Programs	416,937	402,778	369,145						-
PE 0603891C Special Programs – MDA	193,157	175,712	301,566						-
PE 0603892C Ballistic Missile Defense Aegis	1,126,337	1,113,655	1,690,758						-
PE 0603893C Space Tracking & Surveillance System	226,499	208,923	180,000						-
PE 0603894C Multiple Kill Vehicle	223,084	283,481	0						-
PE 0603895C BMD System Space Program	16,237	24,686	12,549						-
PE 0603896C BMD C2BMC	439,997	288,287	340,014						-
PE 0603897C BMD Hercules	51,387	55,764	48,186						-
PE 0603898C BMD Joint Warfighter Support	45,400	69,743	60,921						-
PE 0603904C Missile Defense Integration & Operations Center (MDIOC)	77,102	106,040	86,949						-
PE 0603906C Regarding Trench	1,945	2,968	6,164						-
PE 0603907C Sea Based X-Band Radar (SBX)	155,244	146,895	174,576						-
PE 0603908C BMD Europ Intercep Site	0	362,007	0						-
PE 0603909C BMD Europ Midcourse Radar	0	76,537	0						-
PE 0603911C BMD European Capability	0	0	50,504						-
PE 0603912C BMD European Comm Support	0	27,008	0						-
PE 0603913C Israeli Cooperative	0	0	119,634						-
PE 0605502C Small Business Innovative Research BMDO	137,409	0	0						-
PE 0901585C Pentagon Reservation	5,971	19,667	19,709						-
PE 0901598C Management Headquarters – MDA	83,907	81,174	57,403						-

*Note: The Ballistic Missile Defense System (BMDS) is an integrated, interoperable, global defense system. The programs which comprise the BMDS are interdependent.*

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	

**D. Acquisition Strategy**

GMD will continue to follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, development, and evolutionary acquisition through the use of MDA's new block structure and incremental development. The Agency has structured the missile defense acquisition strategy to continually provide needed upgrades to the GMD system components within the new block structure and funding availability. This process minimizes the risk of obsolescence, provides opportunities for standards updates, and allows decision makers to make informed trades between cost, schedule, and performance while exploring operational and technological possibilities. This developmental approach has been enhanced within the GMD program by additional test infrastructure, improved test management, and improved models and simulations that have enhanced GMD's ability to test in more complex and operationally realistic test environments earlier than the standard acquisition process.

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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<b>I. Product Development Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>Ground Systems</b>										
Ft. Greely Missile Field 2	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/VA	145,300	78,401	1/2Q	13,200	1/2Q			236,901
Ft. Greely Future Power Plant	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/VA	39,366	79,741	1/2Q	0	4Q			119,107
GS S/W Build 6	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/VA	0	33,160	1/2Q	0	1/2Q			33,160
Near Term Discrimination	SS/CPAF	Boeing/AL/AK/AZ/CA/CO/VA	4,354	0	1/2Q	0	1/2Q			4,354
GS S/W for Flight Test	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/VA	0	0	1/2Q	30,846	1/2Q			30,846
LHC Transition to DISA	MIPR	MDA/ DISA	0	0	N/A	26,000	1Q			26,000
<b>Ground Based Interceptor</b>										
GBIs 31-38	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/VA	228,337	119,600	1/2Q	112,641	1/2Q			460,578
GBIs 39-44	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/TX/VA	0	60,632	1/2Q	0	4Q			60,632
GBI EKV Manufacturing Restart	SS/CPAF	Boeing/ AL/AZ/CA	0	49,098	1/2Q	0	N/A			49,098
GBI EKV Manufacturing Min Production	SS/CPAF	Boeing/ AL/AZ/CA	0	28,380	1/2Q	79,712	N/A			108,092
GBI EKV/OBV Development	SS/CPAF	Boeing/ AL/AZ/CA	0	18,272	N/A	3,241	N/A			21,513
2-Stage Adaptation (Heritage)	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/TX/VA	34,278	0	1/2Q	0	1/2Q			34,278
GBI Refurbishment	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/TX/VA	0	21,384	1/2Q	622	1/2Q			22,006

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/Oblg Date	FY 2010 Cost	FY 2010 Award/Oblg Date	FY 2011 Cost	FY 2011 Award/Oblg Date	Total Cost
Test Interceptors	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/TX/VA	0	71,402	1/2Q	15,020	1/2Q			86,422
Subtotal Product Development			451,635	560,070		281,282				1,292,987

**Remarks**

**II. Support Costs Cost ( \$ in Thousands )**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/Oblg Date	FY 2010 Cost	FY 2010 Award/Oblg Date	FY 2011 Cost	FY 2011 Award/Oblg Date	Total Cost
<b>Ground Systems</b>										
Ground Systems Prime Prg Support	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/TX/VA	0	25,698	1/2Q	21,940	1/2Q			47,638
<b>Ground Based Interceptor</b>										
GBI Prime Prg Support	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO/TX/VA	0	81,390	1/2Q	67,266	1/2Q			148,656
<b>Program Management</b>										
Program Management	SS/CPAF	Boeing/AL/AK/AZ/CA/CO/TX/VA	0	87,727	1/2Q	73,603	1/2Q			161,330
Govt Civilian Salaries	MIPR	MDA/AL/VA	0	28,300	1/2Q	24,800	1/2Q			53,100
FFRDC Support	MIPR	MIT/LL/AL/VA/CO	0	4,100	1/2Q	6,321	1/2Q			10,421
Other Govt Agencies	MIPR	Various/AL/VA/FL/CO	0	6,300	1/2Q	5,500	1/2Q			11,800
SETA Support	C/CPAF	CSC LTAP/AL/VA/CO/AK	0	61,750	1/2Q	65,908	1/2Q			127,658
DPW World-Wide Support	MIPR	MDA DPW/AL	0	18,863	1/2Q	6,195	1/2Q			25,058
Safety and Quality	C/CPAF	Boeing/AL/AK/AZ/CA/CO/TX/VA	0	5,824	1/2Q	1,272	1/2Q			7,096

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
BMDs ECPs	MIPR	MDA	0	0	N/A	2,996	1/2Q			2,996
<b>Element Engineering and Integration</b>										
BMDs HWIL	MIPR	MDA	0	0	1/2Q	34,145	1/2Q			34,145
Test Infrastructure	SS/CPAF	Boeing/AL/AK/AZ/CA/CO/TX/VA	0	25,208	1/2Q	5,947	1/2Q			31,155
Modeling and Simulation	SS/CPAF	Boeing/AL/AK/AZ/CA/CO/TX/VA	0	30,990	1/2Q	8,798	1/2Q			39,788
System Engineering and Integration	SS/CPAF	Boeing/AL/AK/AZ/CA/CO/TX/VA	0	51,270	1/2Q	54,067	1/2Q			105,337
MAC 1 Information Assurance	SS/CPAF	Boeing/AL/AK/CA/CO/VA/ NG/AL/CA/MA	0	11,875	1/2Q	16,266	1/2Q			28,141
BMDs Common Threat	MIPR	MDA	0	3,293	1/2Q	3,386	1/2Q			6,679
Subtotal Support Costs			0	442,588		398,410				840,998

**Remarks**

**III. Test and Evaluation Cost ( \$ in Thousands )**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>Element Test and Evaluation</b>										
Element Readiness Test Costs	C/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	0	13,626	1/2Q	0	4Q			13,626

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
Flight Test Range Costs	MIPR	VAFB/ CA, PRST/HI	0	21,944	1/2Q	17,172	1/2Q			39,116
Test Software & Labs	C/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	0	48,406	1/2Q	19,796	1/2Q			68,202
Flight Test Planning, Analysis & Execution	C/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	0	49,142	1/2Q	26,105	1/2Q			75,247
Infrastructure Support	C/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	0	16,281	1/2Q	22,211	1/2Q			38,492
<b>Subtotal Test and Evaluation</b>			0	149,399		85,284				234,683

**Remarks**

**IV. Management Services Cost ( \$ in Thousands )**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
Subtotal Management Services										

**Remarks**

Project Total Cost			451,635	1,152,057		764,976				2,368,668
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**Remarks**

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Flight Tests</b>																																
FTG-06								◇																								
<b>Integrated/Distributed Ground Tests</b>																																
GTI-04									▽																							
GTD-04											▽																					
Fast Shield II							△																									
GT-199								▽																								
<b>Flight Test Interceptors</b>																																
FTG-08 GBI												△																				
<b>Interceptor Fleet Management</b>																																
GBI Refurbishments							△																									
<b>Ground Systems</b>																																
RIDT #2 at VAFB				▲																												
<b>Ground Based Interceptors (GBI)</b>																																

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	★	Milestone Decision (planned)
◆	Element Test (complete)	◇	Element Test (planned)
▽	System Level Test (complete)	▽	System Level Test (planned)
▲▲	Complete Activity	▲▲	Planned Activity

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**Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile**

Date  
**May 2009**

**APPROPRIATION/BUDGET ACTIVITY**  
**RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**

**R-1 NOMENCLATURE**  
**0603882C Ballistic Missile Defense Midcourse Defense Segment**

Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Ground Based Interceptors (GBI)</b>																																	
GBIs 31-34												△	△																				
GBIs 35-38													△																				
GBI Sub-Assemblies (39-43)													△																				
GBI 44 (for EIS testing)								△																									

**Legend**

	Significant Event (complete)		Significant Event (planned)
	Milestone Decision (complete)		Milestone Decision (planned)
	Element Test (complete)		Element Test (planned)
	System Level Test (complete)		System Level Test (planned)
	Complete Activity		Planned Activity

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<b>Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
<b>Flight Tests</b>								
FTG-06		4Q						
<b>Integrated/Distributed Ground Tests</b>								
GTI-04			2Q					
GTD-04			3Q					
Fast Shield II		2Q						
GT-199		3Q						
<b>Flight Test Interceptors</b>								
FTG-08 GBI			4Q					
<b>Interceptor Fleet Management</b>								
GBI Refurbishments		3Q						
<b>Ground Systems</b>								
RIDT #2 at VAFB	4Q							
<b>Ground Based Interceptors (GBI)</b>								
GBIs 31-34			2Q-3Q					
GBIs 35-38			4Q					
GBI Sub-Assemblies (39-43)			4Q					
GBI 44 (for EIS Testing)		4Q						

For all BMDS Level Test Schedule information, please refer to the BMDS Level Test Schedule tab

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>May 2009</b>		
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<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>				

COST (\$ in Thousands)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
DX08 Ground Based Midcourse Defense (GMD) Block 4.0	105,883	0	0					
RDT&E Articles Qty	0	0	0					

*Note:*  
*Based on FY09 Congressional direction, the program content for Block 4, previously planned for FY09 in the Midcourse PE (0603882C) has been moved to the new BMDS European Interceptor Site PE (0603908C). Beginning in FY10, program content for the BMDS European Interceptor Site will consolidate to the new European Capability PE (0603911C).*

*Funding for European Interceptor Site construction in FY08 and FY09 previously captured in the midcourse PE RDT&E budget exhibits is now explained in MDA military construction DD forms 1390/1391.*

*GBIs 43-44 were reallocated in FY08 for acceleration of the 2-stage GBI flight test program. [Interdependency by European Capability PE (0603911C) and BMD European Interceptor Site PE (0603908C)] These GBIs became interceptors for BVT-01 and FTG-07.*

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

Block 4.0 provides the funding for the expansion of the BMDS capability at a third missile site; execution of the flight and ground testing program to include the demonstration of additional Engagement Sequence Groups (ESGs); fielding of additional interceptors; and the sustainment and support for the fielded capability.

Block 4.0 incorporates the next increment of fielded capability with ten (10) additional interceptors for a European Site.

Block 4.0 planned additional enhancements for European Capability includes:

- European Interceptor Site (EIS) with ten (10) additional silos, and ten (10) Silo Interface Vaults (SIVs), and Launch Support Equipment (including CLE) to support interceptors and provide capabilities comparable to other operational sites.
- A Relocatable IFICS Data Terminal (RIDT) capable of sending in-flight target updates to and receiving in-flight status reports from interceptors launched from European Capability.

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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- GMD Communication Network (GCN) infrastructure connecting European Capability components to GMD Fire Control (GFC) Nodes located at the Missile Defense Integration and Operations Center (MDIOC) and Fort Greely, AK.
- European Capability facilities including: Interceptor Monitoring Facility, Mechanical Electrical Building (MEB), Interceptor Storage Facility, RIDT Building, Military Satellite Communications (MILSATCOM) facility and other facilities at the European Interceptor Site (EIS) capable of providing appropriate protection of equipment.
- Design and development of GFC improvements to include multi-AOR, 2-Stage interceptor Fly-outs, EMR & EIS integration.
- Fielding of ten (10) 2-Stage configuration Ground Based Interceptors (GBIs).

**B. Accomplishments/Planned Program**

	FY 2008	FY 2009	FY 2010	FY 2011
Ground Systems	105,883	0	0	
RDT&E Articles (Quantity)	0	0	0	

The GMD Ground Systems (GS) enable fire control and operation of the GMD Element as part of the BMDS. The European Site Ground System project includes ten (10) missile silos and Silo Interface Vault (SIVs), (2) IFICS Data Terminal, connectivity to the GMD Communication Network (GCN), Command Launch Equipment, and upgraded Ground Systems hardware.

**FY08 Accomplishments:**

- Initiated planning and design for European Interceptor Site (EIS) Missile Defense Complex (\$28.4Million)
- Initiated planning of the manufacturing process of Launch Site Components (LSC).
- Completed Ground Systems (GS) Systems Requirements Review (SRR) in 4th quarter FY08. This milestone allows GMD to initiate development of GS software upgrades to accommodate additional missile site

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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**C. Other Program Funding Summary**

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Total Cost
PE 0603175C Ballistic Missile Defense Technology	106,437	119,308	109,760						-
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,034,478	956,686	719,465						-
PE 0603883C Ballistic Missile Defense Boost Defense Segment	503,475	400,751	186,697						-
PE 0603884C Ballistic Missile Defense Sensors	574,231	777,693	636,856						-
PE 0603886C Ballistic Missile Defense System Interceptors	330,874	385,493	0						-
PE 0603888C Ballistic Missile Defense Test and Targets	619,137	919,956	966,752						-
PE 0603890C Ballistic Missile Defense Enabling Programs	416,937	402,778	369,145						-
PE 0603891C Special Programs - MDA	193,157	175,712	301,566						-
PE 0603892C Ballistic Missile Defense Aegis	1,126,337	1,113,655	1,690,758						-
PE 0603893C Space Tracking & Surveillance System	226,499	208,923	180,000						-
PE 0603894C Multiple Kill Vehicle	223,084	283,481	0						-
PE 0603895C BMD System Space Program	16,237	24,686	12,549						-
PE 0603896C BMD C2BMC	439,997	288,287	340,014						-
PE 0603897C BMD Hercules	51,387	55,764	48,186						-
PE 0603898C BMD Joint Warfighter Support	45,400	69,743	60,921						-
PE 0603904C Missile Defense Integration & Operations Center (MDIOC)	77,102	106,040	86,949						-
PE 0603906C Regarding Trench	1,945	2,968	6,164						-
PE 0603907C Sea Based X-Band Radar (SBX)	155,244	146,895	174,576						-
PE 0603908C BMD Europ Intercep Site	0	362,007	0						-
PE 0603909C BMD Europ Midcourse Radar	0	76,537	0						-
PE 0603911C BMD European Capability	0	0	50,504						-
PE 0603912C BMD European Comm Support	0	27,008	0						-
PE 0603913C Israeli Cooperative	0	0	119,634						-
PE 0605502C Small Business Innovative Research BMDO	137,409	0	0						-
PE 0901585C Pentagon Reservation	5,971	19,667	19,709						-
PE 0901598C Management Headquarters - MDA	83,907	81,174	57,403						-

*Note: The Ballistic Missile Defense System (BMDS) is an integrated, interoperable, global defense system. The programs which comprise the BMDS are interdependent.*

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	

**D. Acquisition Strategy**

GMD will continue to follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, development, and evolutionary acquisition through the use of MDA's new block structure and spiral development. The Department has structured the missile defense acquisition strategy to continually provide needed upgrades to the GMD system components within the new block structure. This process allows early implementation of new technologies and enhanced capabilities able to defend against the evolving threats of today and the future. This process also minimizes the risk of obsolescence, provides opportunities for standards updates, and allows decision makers to make informed trades between cost, schedule, and performance while exploring operational and technological possibilities. This developmental approach has been enhanced within the GMD program to include additional test infrastructure, improved test management, and improved models and simulations that have enhanced GMD's ability to test in more complex and operationally realistic test environments earlier than the standard acquisition process.



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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail								Date May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment					
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
Subtotal Support Costs										
<b>Remarks</b>										
<b>III. Test and Evaluation Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										
<b>Remarks</b>										
<b>IV. Management Services Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost			77,180	0		0				77,180
<b>Remarks</b>										

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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COST (\$ in Thousands)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
XX08 Ground Based Midcourse Defense (GMD) Sustainment	278,423	266,564	195,369					
RDT&E Articles Qty	0	0	0					

*Note:*

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

The Sustainment Block (Project XX08) provides for the operations and sustainment of GMD fielded capabilities. This project also includes Base Operations support costs and delivery of Government Furnished Material and Services in support of the Prime Contract. The GMD Prime contractor and subcontractors will provide monitoring, diagnostics and maintenance of the fielded GMD components. Operations and sustainment efforts include:

- The continued development and validation of maintenance procedures
- Tracking of repair parts stock levels
- 24/7 monitoring and maintenance at Vandenberg AFB, Fort Greely, the Missile Defense Integration Operations Center (MDIOC) in Colorado Springs, and across the nation-wide GMD Communication Network (GCN)
- Delivery of essential Government Furnished Material and Services to ensure Prime Contract performance
- Base Operations Support at Vandenberg AFB, Fort Greely and Colorado Springs
- Preparation for Transition and Transfer of GMD system assets to successor DoD component.
- Upgrade and Maintain Security System at Fort Greely
- Development and Implementation of a Performance Based Logistics contract.

The government is developing a competitive logistics acquisition strategy for follow-on maintenance in accordance with service transition plans and the Performance Based Logistics concept.

**B. Accomplishments/Planned Program**

	FY 2008	FY 2009	FY 2010	FY 2011
Operations and Sustainment	278,423	266,564	195,369	
RDT&E Articles (Quantity)	0	0	0	

**FY08 Accomplishments:**

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<ul style="list-style-type: none"><li>Supported element operations and sustainment via a mixture of Prime Contractor and Government-provided services at all sites.</li><li>Maintained GMD facilities at field locations via a series of Inter-Service Support Agreements.</li><li>As part of a stockpile reliability program, GMD initiated quarterly maintenance built-in testing (MBIT); conducted a reliability assessment of the fleet and began tracking reliability by interceptor tail-number; and initiated GBI shelf-life studies through accelerated aging of GBI components.</li><li>Updated crew training materials and packages to reflect operational changes; established a teaming arrangement with Tobyhanna Army Depot for additional documentation development to ensure products are consistent with Army requirements.</li><li>Commenced a teaming effort with Sandia Laboratories to address essential security upgrades at field locations.</li><li>Established a Transition and Transfer (T2) team with Warfighter, Army and MDA membership to address service requirements for eventual weapon system handoff from MDA.</li></ul> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"><li>Provide GMD Element operations and sustainment for PME, support equipment, and operational facilities at Ft. Greely, Colorado Springs, and Vandenberg Air Force Base.</li><li>Continue minimal spare replenishment through improved logistics repair analysis captured through performance metrics.</li><li>Continue on-site sustaining engineering, ensuring logistics analysis is incorporated in technical data products.</li><li>Continue stockpile reliability and component aging testing.</li><li>Continue to develop and field System Level GMD Technical Manuals; update training materials and sustainment training packages to maintain operational and maintenance crew proficiency.</li><li>Continue security enhancements at FGA and VAFB.</li><li>Initiate Performance Based Logistics (PBL) through full incorporation of PBL metrics; trained crews, reduced costs, and increased availability.</li></ul> <p>FY10 Planned Program:</p> <ul style="list-style-type: none"><li>Provide GMD Element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at Ft. Greely, Colorado Springs, and Vandenberg Air Force Base.</li><li>Continue minimal spare replenishment through improved logistics repair analysis captured through performance metrics.</li><li>Continue on-site sustaining engineering, ensuring logistics analysis is incorporated in technical data products.</li></ul>		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>May 2009</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>	
<ul style="list-style-type: none"><li>• Continue stockpile reliability and component aging testing.</li><li>• Continue to develop and field System Level GMD Technical Manuals and update training materials to maintain crew proficiency.</li><li>• Continue security enhancements at FGA and VAFB.</li></ul>		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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**C. Other Program Funding Summary**

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Total Cost
PE 0603175C Ballistic Missile Defense Technology	106,437	119,308	109,760						-
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,034,478	956,686	719,465						-
PE 0603883C Ballistic Missile Defense Boost Defense Segment	503,475	400,751	186,697						-
PE 0603884C Ballistic Missile Defense Sensors	574,231	777,693	636,856						-
PE 0603886C Ballistic Missile Defense System Interceptors	330,874	385,493	0						-
PE 0603888C Ballistic Missile Defense Test and Targets	619,137	919,956	966,752						-
PE 0603890C Ballistic Missile Defense Enabling Programs	416,937	402,778	369,145						-
PE 0603891C Special Programs – MDA	193,157	175,712	301,566						-
PE 0603892C Ballistic Missile Defense Aegis	1,126,337	1,113,655	1,690,758						-
PE 0603893C Space Tracking & Surveillance System	226,499	208,923	180,000						-
PE 0603894C Multiple Kill Vehicle	223,084	283,481	0						-
PE 0603895C BMD System Space Program	16,237	24,686	12,549						-
PE 0603896C BMD C2BMC	439,997	288,287	340,014						-
PE 0603897C BMD Hercules	51,387	55,764	48,186						-
PE 0603898C BMD Joint Warfighter Support	45,400	69,743	60,921						-
PE 0603904C Missile Defense Integration & Operations Center (MDIOC)	77,102	106,040	86,949						-
PE 0603906C Regarding Trench	1,945	2,968	6,164						-
PE 0603907C Sea Based X-Band Radar (SBX)	155,244	146,895	174,576						-
PE 0603908C BMD Europ Intercep Site	0	362,007	0						-
PE 0603909C BMD Europ Midcourse Radar	0	76,537	0						-
PE 0603911C BMD European Capability	0	0	50,504						-
PE 0603912C BMD European Comm Support	0	27,008	0						-
PE 0603913C Israeli Cooperative	0	0	119,634						-
PE 0605502C Small Business Innovative Research BMDO	137,409	0	0						-
PE 0901585C Pentagon Reservation	5,971	19,667	19,709						-
PE 0901598C Management Headquarters – MDA	83,907	81,174	57,403						-

*Note: The Ballistic Missile Defense System (BMDS) is an integrated, interoperable, global defense system. The programs which comprise the BMDS are interdependent.*

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	

**D. Acquisition Strategy**

The Ground Based Midcourse Defense (GMD) Program acquisition strategy for Operations and Sustainment (O&S) is to implement a competitive Performance Based Logistics (PBL) approach for the future sustainment and support of the GMD weapons system. The PBL O&S approach emphasizes application of performance based tenets to establish long term relationships which provide timely high quality sustainment and support of the core GMD weapons system while reducing life cycle and long term ownership costs. The competitive PBL O&S scope includes design authority for GMD mission equipment, support equipment and facilities as well as surveillance testing, component refurbishment and sustainment/obsolescence engineering activities. Current GMD O&S support is provided via a sole source contract for CY09 with a one year option for CY10 to support the system until the competitive GMD PBL O&S contract is awarded at the end of CY10. As part of the competitive O&S PBL acquisition strategy, an industry information exchange phase began in 2009. The GMD PBL O&S approach will help minimize the risk of obsolescence, provide opportunities for periodic weapons system refresh, and allow decision makers to make informed trades between cost, schedule, and performance while exploring operational and technological possibilities.

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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**I. Product Development Cost ( \$ in Thousands )**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
Subtotal Product Development										

**Remarks**

**II. Support Costs Cost ( \$ in Thousands )**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>Operations and Sustainment</b>										
Maintenance of Primary System	SS/CPAF	Boeing/ AL/AK/CA	103,932	96,692	1/2Q	70,132	1/2Q			270,756
Sustaining Support Services	SS/CPAF	Boeing/ AL/AK/CA	97,899	91,080	1/2Q	70,814	1/2Q			259,793
O&S Repair and Maintenance Personnel	SS/CPAF	Boeing/ AL/AK/CA	16,114	14,992	1/2Q	11,613	1/2Q			42,719
Inter-service Support Agreement (ISA) Leases and Services	MIPR	AK/ Beale & Others	2,782	21,400	1/2Q	13,500	1/2Q			37,682
Government Furnished Equipment & Services (GFX)	C/Variou	DISA/VA, AMCOM/AL, SMDC/AK/AL/ HI/ L3Com/AK & AL & Others	4,287	5,200	1/2Q	15,810	1/2Q			25,297
Leases & Services FGA	MIPR	Ft. Greely, AK	8,189	7,100	1/2Q	8,000	1/2Q			23,289
Leases & Services VAFB/COS	MIPR	Vandenberg AFB/COS	9,254	10,400	1/2Q	2,500	1/2Q			22,154

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
Logistics Support Projects (RAM-T and other Operational Readiness Improvement Efforts)	MIPR	NSWC Crane, Tobyhana Depot, Hill AFB	19,949	15,000	1/2Q	0	N/A			34,949
Ft. Greely Security Upgrade	FFRDC	Sandia National Laboratories	11,484	0	N/A	0	N/A			11,484
Certification & Accreditation Contract	MIPR	MDA/ DOC	4,532	4,700	1/2Q	3,000	1/2Q			12,232
<b>Subtotal Support Costs</b>			<b>278,422</b>	<b>266,564</b>		<b>195,369</b>				<b>740,355</b>

**Remarks**

**III. Test and Evaluation Cost ( \$ in Thousands )**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award/ Oblg Date	FY 2010 Cost	FY 2010 Award/ Oblg Date	FY 2011 Cost	FY 2011 Award/ Oblg Date	Total Cost
<b>Subtotal Test and Evaluation</b>										

**Remarks**



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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>May 2009</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>
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Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015									
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4						
<b>Security Upgrades at FGA</b>																																						
FGA Security Effectiveness Assessment	▲																																					
Ground Surveillance Radar/Thermal Imager Interim System		▲	—	▲																																		
35% Design Review for the Electronic Security System			★																																			
65% Design Review for the Electronic Security System				★																																		
95% Design Review for the Electronic Security System								☆																														
<b>Transition and Transfer</b>																																						
Transition and Transfer Plan of Action				▲	—	▲																																
Transition and Transfer Integration Process Flow; Data Transfers; Configuration Baselines								▲	—	▲																												
Weapons Systems Validations; Process Refinement												▲	—	▲																								
<b>Performance Based Logistics</b>																																						
Acquisition Strategy; Supportability and Sustainability								▲	—	▲																												
Government Request for Proposal Development												▲	—	▲																								

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	☆	Milestone Decision (planned)
◆	Element Test (complete)	◇	Element Test (planned)
▼	System Level Test (complete)	▽	System Level Test (planned)
▲—▲	Complete Activity	▲—▲	Planned Activity



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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
<b>Security Upgrades at FGA</b>								
FGA Security Effectiveness Assessment	1Q							
Ground Surveillance Radar/Thermal Imager Interim System	2Q-4Q							
35% Design Review for the Electronic Security System	3Q							
65% Design Review for the Electronic Security System	4Q							
95% Design Review for the Electronic Security System		1Q						
<b>Transition and Transfer</b>								
Transition and Transfer Plan of Action	4Q	1Q						
Transition and Transfer Integration		2Q-3Q						
Process Flow; Data Transfers; Configuration Baselines		4Q	1Q					
Weapons Systems Validations; Process Refinement			2Q-3Q					
<b>Performance Based Logistics</b>								
Acquisition Strategy; Supportability and Sustainability		1Q-2Q						
Government Request for Proposal Development		3Q-4Q						
Solicitation and Evaluations			1Q-2Q					
Source Selection			3Q-4Q					

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>May 2009</b>		
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<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>				

COST (\$ in Thousands)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
ZX40 Program-Wide Support	132,918	63,682	18,722					
RDT&E Articles Qty	0	0	0					

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

Program-Wide Support provides funding for common non-headquarters support functions across the entire program. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Other costs included provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuations on a limited number of foreign contracts.

**B. Accomplishments/Planned Program**

	FY 2008	FY 2009	FY 2010	FY 2011
Civilian Salaries and Support	132,918	63,682	18,722	
RDT&E Articles (Quantity)	0	0	0	

See Section A: Mission Description and Budget Item Justification

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>May 2009</b>			
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>R-1 NOMENCLATURE</b> <b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>					
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**C. Other Program Funding Summary**

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Total Cost
PE 0603175C Ballistic Missile Defense Technology	106,437	119,308	109,760						-
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,034,478	956,686	719,465						-
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PE 0603884C Ballistic Missile Defense Sensors	574,231	777,693	636,856						-
PE 0603886C Ballistic Missile Defense System Interceptors	330,874	385,493	0						-
PE 0603888C Ballistic Missile Defense Test and Targets	619,137	919,956	966,752						-
PE 0603890C Ballistic Missile Defense Enabling Programs	416,937	402,778	369,145						-
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PE 0603895C BMD System Space Program	16,237	24,686	12,549						-
PE 0603896C BMD C2BMC	439,997	288,287	340,014						-
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PE 0603906C Regarding Trench	1,945	2,968	6,164						-
PE 0603907C Sea Based X-Band Radar (SBX)	155,244	146,895	174,576						-
PE 0603908C BMD Europ Intercep Site	0	362,007	0						-
PE 0603909C BMD Europ Midcourse Radar	0	76,537	0						-
PE 0603911C BMD European Capability	0	0	50,504						-
PE 0603912C BMD European Comm Support	0	27,008	0						-
PE 0603913C Israeli Cooperative	0	0	119,634						-
PE 0605502C Small Business Innovative Research BMDO	137,409	0	0						-
PE 0901585C Pentagon Reservation	5,971	19,667	19,709						-
PE 0901598C Management Headquarters – MDA	83,907	81,174	57,403						-

*Note: The Ballistic Missile Defense System (BMDS) is an integrated, interoperable, global defense system. The programs which comprise the BMDS are interdependent.*