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<b>Missile Defense Agency (MDA) Exhibit R-2 RDT&amp;E Budget Item Justification</b>						Date <b>February 2007</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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003
0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development	2,277,105	2,592,162	664,189	447,971	0	0	0	0
0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development	68,308	338,874	1,603,667	1,305,751	495,719	336,161	0	0
0008 Ground-Based Midcourse Defense (GMD) Block 2010	0	62,900	206,012	560,800	1,636,905	1,335,487	69,300	78,970
R108 Ground-Based Midcourse Defense (GMD) Block 2012	0	0	0	0	0	0	1,060,665	1,078,606
0602 Program-Wide Support	45,833	49,122	46,196	45,143	46,978	28,315	23,117	25,427
Amount Included in PE 0904903D					-772,344	-714,375	-389,306	-395,535
Total PE Cost Reflected in R-1	2,391,246	3,043,058	2,520,064	2,359,665	1,407,258	985,588	763,778	787,468

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

**A.1 System Element Description**

The Ground-Based Midcourse Defense (GMD) element is a key component of the Ballistic Missile Defense System (BMDS). This element consists of multiple sensors, a complex communications system, fire control capability, and ground-based interceptors capable of intercepting intermediate and long-range ballistic missile threats in their midcourse phase of flight. The midcourse phase of flight presents a significant opportunity to engage ballistic missile threats. This phase, compared to boost or terminal, has significant time to provide sensor viewing from multiple platforms and multiple engagement opportunities for hit-to-kill interceptors to perform their functions.

The comprehensive development and test program within GMD will continually upgrade the system from its initial limited capability to an enhanced capability able to destroy advanced threats in the future. The program incorporates development and fielding of additional component capability enhancements, such as additional interceptors, enhanced sensors, and additional and enhanced Ground Systems (GS) hardware; the execution of the flight and ground testing program, including the demonstration of additional Engagement Sequence Groups (ESGs); and the maintenance, sustainment, and support of the fielded capability. These activities and assets support enhanced capabilities to detect, track, intercept, and defeat ballistic missile threats.

The currently fielded system is limited, intended to support comprehensive development and testing while providing defense of the United States against attack by a limited number of ballistic missiles. GMD has consistently balanced fielding decisions with this robust development program to deliver required operational capability within the existing resource constraints. The FY2008 budget submission emphasizes integration of the GMD element into the BMDS by delivering increased engagement capabilities against a broad spectrum of potential threats. This capability is described by

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<p>Engagement Sequence Groups (ESGs) which define the sequence of events used to enable the weapon system to engage a target. The ESGs provide the structure for describing the level of integration maturity of the GMD system within the BMDS. Each engagement sequence identifies the sensors that support four basic functions (acquire/cue, commit, update, and discriminate) required to launch GMD Ground-Based Interceptors (GBI) against a target. Consistent with the BMDS block development strategy, additional ESGs are incorporated into blocks as sensor systems are upgraded and become available. ESGs are addressed separately in the R-2A for each respective block.</p> <p>GMD has also implemented a structured progression of qualification, ground, and flight tests. The flight and ground test program is designed to evaluate and verify GMD system performance against a broader range of emerging threats and collect data to further anchor models and simulations. This comprehensive program implements recommendations from the 2005 Independent Review Team (IRT) and Mission Readiness Task Force (MRTF). Recent test program successes are evidence of the on-going commitment to rigorous testing and quality measures that have been instituted. Maintenance builds will also be delivered to implement changes to address test findings and assure that the warfighter has a robust and stable system.</p> <p>GMD will expand the BMDS capability by continuing the site development for a third missile site. This includes fielded capabilities with additional interceptors (up to 10) for either a European Site or increased inventory at Fort Greely, AK. Supporting equipment and communications capabilities and other facilities capable of providing appropriate protection of equipment are planned.</p> <p>The Ground-based Midcourse Element of the BMDS consists of Blocks 2004/2006, 2008, 2010 and 2012:</p> <ul style="list-style-type: none"> <li>• Block 2004/2006 (Project 0808) includes continued development and fielding of GBIs and ground-based capabilities (an upgraded Cobra Dane radar, upgraded Early Warning Radars (UEWR), a Sea-Based X-Band (SBX) radar, In-Flight Interceptor Communications System (IFICS) data terminals (IDT), Ground-based Fire Control and Communication (GFC/C) Nodes, and a Global Communications Network (GCN) including fiber and satellite communications systems). Block 2006 includes integrated flight and ground testing of the multi-layered BMDS components and the fielding of additional component capability enhancements. The fielding of additional GBIs, integration of UEWRs and the SBX, and fielding of two additional IDTs in Block 2006 broadens the area of coverage of the initial BMDS. Additionally, efforts include the development of enhanced capabilities to detect, track, intercept, and defeat ballistic missile threats, and the incorporation of simultaneous test and operations upgrades.</li> <li>• Block 2008 (Project 0908) includes an additional missile field at Fort Greely, integrated testing of the multi-layered BMDS components, the fielding of additional GBIs, and provides an improvement in the ability to engage evolving threats by testing and fielding advanced discrimination algorithms.</li> <li>• Block 2010 provides for the expansion of the BMDS capability at a third missile site as well as integrated testing of the multi-layered BMDS components. Block 2010 incorporates the fielding of additional interceptors which will include integration of two-stage Orbital Boost Vehicles</li> </ul>		

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<p>(OBVs) (based on the existing three-stage OBV) design for either a European Site, or expanded inventory at Fort Greely. It will also incorporate the replacement of obsolescent Ground Systems hardware to include the IBM Regatta GFC/C processors.</p> <ul style="list-style-type: none"><li>Block 2012 (Project R108) includes continued maintenance, testing, and integration of the multi-layered BMDS components.</li></ul>		
<p><b><u>A.2 System Element Budget Justification and Contribution to the Ballistic Missile Defense System (BMDS)</u></b></p> <p>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:</p> <ul style="list-style-type: none"><li>Sensors: UEWRs (Beale AFB and Fylingdales, U.K.), Cobra Dane Radar, Sea-Based X-Band Radar (SBX), and the Aegis external system interface</li><li>Interceptors: On-going interceptor fielding, GBI emplacement, and the Exoatmospheric Kill Vehicle (EKV) transition to rate manufacturing</li><li>Fire Control and Communications: High availability with dedicated communications loop inside fire-control ring, 20,000+ miles of terrestrial / submarine fiber, nine satellite communications (SATCOM) links, dual redundant fire control nodes</li><li>Infrastructure: Operational and support facilities at Fort Greely, Eareckson Air Station, Vandenberg AFB, Beale AFB, Schriever AFB, Fylingdales, U.K., and Adak, AK</li><li>Physical security including fences, sensors, crash barriers, entry control and lighting</li></ul>		
<p><b><u>A.3 Major System Element Goals</u></b></p> <ul style="list-style-type: none"><li>Continue ground and flight testing of Blocks 2004/2006, 2008, 2010, and 2012 interceptors and components</li><li>Continue to field the system at Vandenberg Air Force Base, Fort Greely, AK, and at a third missile site</li><li>Support and sustain the fielded system</li><li>Complete development, fielding and transition to alert of Block 2004</li><li>Complete development, fielding and transition to alert of Block 2006</li><li>Verify capability by operationally realistic testing</li><li>Improve BMDS capability and robustness through continued development and integration</li><li>Expand BMDS via increased ESGs and depth of inventory</li><li>Build an international foundation for missile defense</li></ul>		

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<b><u>A.4 Major Events Schedule and Description</u></b>			
<b>Major Event</b>	<b>Project</b>	<b>Timeframe</b>	<b>Description</b>
<b>Flight Test</b>			
<b>Flight Tests</b>			
FT-1	0808	1Q FY 2006	• Completed DEC 2005
FTG-2	0808	4Q FY 2006	• Test Completed 4th Qtr FY06
FTG-3	0808	3Q FY 2007	• Demonstrate the functionality of the GBI engage on UEWR Beale engagement sequence group (ESG) for a GBI launched from Vandenberg AFB performing all functions through acquisition, discrimination, transition to terminal, and intercepting the lethal object.
FTG-4	0808	4Q FY 2007	• Demonstrate the functionality of the GBI engage on SBX ESG for a GBI launched from Vandenberg AFB performing all functions through acquisition, discrimination, transition to terminal, and intercepting the lethal object from a live target complex launched from Kodiak; demonstrate Aegis cueing of SBX radar.
FTG-5	0908	1Q FY 2008	• Demonstrate BMDS functionality of the GBI engage on SBX Mod 1 Space Based Infrared System (SBIRS) for GBI launched from Vandenberg AFB to perform all functions through acquisition, discrimination, transition to terminal, and intercepting a long range/low elevation lethal object.
FTG-6	0908	3Q FY 2008	• Demonstrate BMDS functionality of the GBI engage on SBX Mod 1 (SBIRS) for GBI launched from Vandenberg AFB to perform all functions through acquisition, discrimination, transition to terminal, and intercepting medium closing velocity lethal object.
FTG-7	0908	1Q FY 2009	• Demonstrate BMDS functionality of the GBI engage on AN-TPY-2 Mod 1 ESG for GBI launched from Vandenberg AFB to perform all functions through acquisition, discrimination, transition to terminal, and intercepting a medium/high closing velocity lethal object.
FTG-X	0908	3Q FY 2009	• Test objectives are under review.
<b>Contract Activity</b>			
<b>BMDS Certification</b>			
FTX-02	0808	2Q FY 2007	• Demonstrate GBI engage on SBX ESG through a simulated intercept of a live target; collect SBX data to support assessment of radar functions as a risk reduction path for FTG-04.
FTS-01	0908	3Q FY 2008	• Demonstrate detection and acquisition of a boosting missile with acquisition sensor; demonstrate handover of boosting missile track from acquisition sensor to track sensor on same System Verification.
FTX-X	0908	2Q FY 2009	• Test objectives under review.
<b>Integrated/Distributed Ground Tests</b>			
GT 04-2.1 (phase 1) Runs for Record	0808	1Q FY 2006	• Completed 1Q FY 2006
GT 04-2.2 Runs for Record	0808	3Q FY 2006	• Completed 3QFY 2006
GT 04-2.3 Runs for Record	0808	3Q FY 2006	• Completed 3Q FY 2006
GT 04-2.4 Runs for Record	0808	4Q FY 2006	• Completed 4Q FY 2006
GTD-01	0808	1Q FY 2007	• Completed 1Q FY 2007

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<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603882C Ballistic Missile Defense Midcourse Defense Segment</b>	
<b>Major Event</b>	<b>Project</b>	<b>Timeframe</b>	<b>Description</b>
GT-04-3 (IGT-6)	0808	2Q FY 2007	<ul style="list-style-type: none"> <li>Demonstrate the readiness of the GMD Block 06 initial capability upgrades including SBX and Fylingdales UK UEWR for field integration and BMDS ground tests.</li> </ul>
GT-04-4A	0808	2Q FY 2007	<ul style="list-style-type: none"> <li>Demonstrate for the first time the end-to-end integration of the UEWR at Fylingdales and Sea Based Radar into the GMD element from simulated target signatures to the delivery of the Weapons Task Plan to the Command Launch Equipment. This event will also include the installation of GFC/C 6a software occurring first at the Joint National Integration Center (JNIC) GFC/C node, phase A of the test.</li> </ul>
GTX-2A	0808	2Q FY 2007	<ul style="list-style-type: none"> <li>Assess the BMDS' ability to simultaneously execute Block 06 ESGs using theater assets with Block 06 scenarios with priority on THAAD engage on AN/TPY-2. GMD provides the GFC/C and the Joint National Integration Center (JNIC) Bell Lab for this event.</li> </ul>
GT-04-4B (DGT-3B)	0808	3Q FY 2007	<ul style="list-style-type: none"> <li>Demonstrate for the first time the end-to-end integration of the UEWR at Fylingdales UK and Sea Based Radar into the GMD element from simulated target signatures to the delivery of the Weapons Task Plan to the Command Launch Equipment. This event will also include the installation of GFC/C 6a software occurring at the Fort Greely node, phase B of the test.</li> </ul>
GTI-02	0808	4Q FY 2007	<ul style="list-style-type: none"> <li>Assess BMDS ability to simultaneously execute multiple Block 06 ESGs using theater and strategic assets with Block 06 scenarios; Assess BMDS initial Block 06 functionality and interoperability with THAAD, AN/TPY-2, C2BMC, GMD, Aegis, SBIRS, and PATRIOT; exercise functionality used in applicable Block 06 ESGs with priority on: THAAD engage on AN/TPY-2, and ESGs with AN/TPY-2 as a sensor.</li> </ul>
GT-06-3 (IGT-7)	0908	1Q FY 2008	<ul style="list-style-type: none"> <li>Demonstrate the readiness of the GMD Block 06 final capability upgrades including the GFC build 6B for field integration and BMDS ground tests; demonstrate GMD capability to launch multiple interceptor types from a single launch site and/or multiple launch sites.</li> </ul>
GT-06-4A (DGT)	0908	1Q FY 2008	<ul style="list-style-type: none"> <li>Assess GMD's ability to simultaneously execute multiple Block 06 Engagement Sequence Groups (ESG) using theater and strategic assets with Block 06 scenarios while using operational communications; assess final GMD Block 06 functionality and interoperability with specific BMDS elements.</li> </ul>
GTD-02	0908	1Q FY 2008	<ul style="list-style-type: none"> <li>Assess BMDS ability to simultaneously execute multiple Block 06 Engagement Sequence Groups (ESG) using theater and strategic assets with Block 06 scenarios while using operational communications.</li> </ul>
GTX-3	0908	2Q FY 2008	<ul style="list-style-type: none"> <li>Test objectives under review.</li> </ul>
GT-06-4B (DGT)	0908	3Q FY 2008	<ul style="list-style-type: none"> <li>Assess GMD's ability to simultaneously execute multiple Block 06 Engagement Sequence Groups (ESG) using theater and strategic assets with Block 06 scenarios while using operational communications; assess final GMD Block 06 functionality and interoperability with specific BMDS elements.</li> </ul>
GTI-03	0908	3Q FY 2008	<ul style="list-style-type: none"> <li>Assess BMDS ability to simultaneously execute multiple Block 06 ESGs using theater strategic assets with Block 06 scenarios and Block 06 threats.</li> </ul>
GTD-03	0908	4Q FY 2008	<ul style="list-style-type: none"> <li>Assess BMDS ability to simultaneously execute multiple Block 06 Engagement Sequence Groups (ESG) using multiple raid sizes; assess Block 06 functionality and interoperability; demonstrate AN/TPY-2 functionality and interoperability with BMDS.</li> </ul>
GTX-4	0908	2Q FY 2009	<ul style="list-style-type: none"> <li>Test objectives under review.</li> </ul>
GTI-4	0908	3Q FY 2009	<ul style="list-style-type: none"> <li>Test objectives under review.</li> </ul>
GTD-4	0908	4Q FY 2009	<ul style="list-style-type: none"> <li>Test objectives under review.</li> </ul>
<b>Capability Enhancement GBIs</b>			
LDC Missiles 10-13	0808	1Q FY 2006 - 4Q FY 2006	<ul style="list-style-type: none"> <li>Completed</li> </ul>

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Major Event	Project	Timeframe	Description
LDC Missiles 14-18	0808	1Q FY 2007 - 2Q FY 2007	
LDC Missiles 19-23	0808	3Q FY 2007 - 4Q FY 2007	
LDC Missile 24	0808	1Q FY 2008	
LDC Missiles 25-44	0908	2Q FY 2008 - 4Q FY 2010	

<b>Radar Certification Test</b>			
FT 04-1	0808	2Q FY 2006	• Completed 2Q, FY 2006

**Other**

<b>SBX</b>			
SBX Integration	0808	2Q FY 2008	• SBX Integrated with BMDS

<b>B. Program Change Summary</b>	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007 PB)	2,442,172	2,876,972	2,650,493	2,397,340
Current President's Budget (FY 2008 PB)	2,391,246	3,043,058	2,520,064	2,359,665
Total Adjustments	-50,926	166,086	-130,429	-37,675
Congressional Specific Program Adjustments	0	179,000	0	0
Congressional Undistributed Adjustments	0	-12,914	0	0
Reprogrammings	-7,805	0	0	0
SBIR/STTR Transfer	-43,121	0	0	0
Adjustments to Budget Years	0	0	-130,429	-37,675

FY06 decrease of \$50.926 million includes the SBIR/STTR transfer and MDA reprogrammings.

FY07 increase of \$166.086 million includes a congressional specific program increase of \$179 million and a portion of the MDA congressional undistributed reduction.

FY08 decrease of \$130.429 million reflects MDA programmatic changes.

FY09 decrease of \$37.675 million reflects MDA programmatic changes.

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COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development	2,277,105	2,592,162	664,189	447,971	0	0	0	0
RDT&E Articles Qty	22	28	12	2	4	0	0	0

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

Block 2004/2006 (Project 0808) provides the funding for the development and fielding of additional component capability enhancements such as execution of the flight and ground testing program to include demonstration of additional Engagement Sequence Groups (ESGs); additional interceptors and Ground Systems (GS) hardware; and the sustainment and support for the fielded capability. These activities and assets support the enhanced capabilities to detect, track, intercept, and defeat ballistic missile threats.

The GMD Block 2004/2006 development program provides enhancements of the interceptor Enhanced Kill Vehicle (EKV), sensors, and GMD GS components and infrastructure. Block 2004/2006 provides the following capabilities:

- The EKV is a “Hit-to-Kill” payload designed to acquire, discriminate, track, and intercept targets in the midcourse phase of flight. The key components and technologies of the EKV include the acquisition and tracking sensors, the on-board maneuvering system, and the on-board vehicle Command, Control, and Communications (C3) systems. For Block 2006, the Capability Enhancement-II (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.
- The sensor development program is a mix of enhancements to existing radar assets and development of new radar capabilities.
  - The program will continue testing of the Upgraded Early Warning Radars (UEWRs) at Beale AFB and Fylingdales, U.K. and the Cobra Dane radar at Shemya, AK.
  - A broad range of X-Band Radar (XBR) technologies will continue in development to support the SBX.
- The GMD GS component is an integrated communications network of nodes to enable the GMD element to function as part of the BMDS. Hardware and software upgrades to the GS will include improvements for the warfighter, strong authentication, booster drop avoidance, simultaneous test and operations upgrades, and hardware upgrades to address emerging obsolescence issues. GS components being upgraded include:
  - Communications links (e.g., CONUS ring with connections to Alaska leased lines or satellite communications between Eareckson AS, Fort Greely, Schriever AFB, Cheyenne Mountain AFS, Peterson AFB, Buckley AFB, SBX, Fylingdales UK, Beale AFB, Vandenberg AFB, etc.)
  - GMD Fire Control and Communications (GFC/C) Nodes [Fort Greely and Joint National Integration Center (JNIC) with remote operator workstations at Cheyenne Mountain Operations Center (CMOC)]

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<ul style="list-style-type: none"><li>○ In-Flight Interceptor Communications System Data Terminal (IDTs) at various locations</li></ul> <p>The Block 2004/2006 GMD flight and ground test program is designed to evaluate and verify GMD system performance and collect data to anchor models and simulations. In Block 2004/2006, two Integrated Ground Tests (IGTs) / Distributed Ground Tests (DGTs) will be conducted that will verify GMD capabilities and support decisions to deploy increased capabilities to the field. In addition, five GMD flight tests will be conducted and two BMDS level flight tests will be supported to demonstrate an increasing level of element capability to defeat realistic threat complexes. Verification of system performance will be completed by exercising high fidelity models and simulations that have been validated with data from the flight and ground test program. Engagement Sequence Groups (ESGs) are demonstrated in the GMD Integrated Test Program. Capabilities of the BMDS will be enhanced as the number of operationally available ESGs and the depth of inventory increases. During Block 2004, GMD demonstrated the capability to execute five ESGs:</p> <ul style="list-style-type: none"><li>• Engage on Cobra Dane (CD) &amp; UEWR</li><li>• Engage on Aegis</li><li>• Launch on Aegis</li><li>• Engage on AN/TPY-2 (Search and Track)</li><li>• Launch on AN/TPY-2 (Search and Track)</li></ul> <p>During Block 2006, additional BMDS ESGs will be demonstrated to include:</p> <ul style="list-style-type: none"><li>• Engage on Cobra Dane (CD) &amp; UEWR (Mod 1)</li><li>• Launch on CD &amp; UEWR</li><li>• Engage on AN/TPY-2</li><li>• Launch on AN/TPY-2</li><li>• Engage (Mod 1) on SBX</li><li>• Launch on SBX</li></ul> <p>Block 2004/2006 funding will support the fielding of significant additional assets. This will increase the available fielded assets to thirty GBIs (with associated ground hardware), six In-Flight Interceptor Communication System (IFICS) Data Terminals (IDTs), three GFC/C nodes, and five Defense Satellite Communications System (DSCS) terminals. This additional hardware will facilitate the conduct of simultaneous test and operations of the GMD element. The resources to operate and sustain the GMD element are also provided within the Block 2004/2006 funding profile. Contractor Logistics Support (CLS) and logistics infrastructure will be supplied for the emplaced GBIs, sensors, and Ground Systems (GS) components.</p>		

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Additionally, spare replenishment, High Altitude Electromagnetic Pulse (HEMP) hardened power enhancements at Fort Greely, and stockpile reliability testing will be provided.

**B. Accomplishments/Planned Program**

	FY 2006	FY 2007	FY 2008	FY 2009
Operations and Sustainment	228,540	504,289	495,481	440,301
RDT&E Articles (Quantity)	0	0	0	0

This effort provides for Logistics Support for the GMD Block 2004/2006 fielded capability. The GMD Prime contractor and subcontractors will provide monitoring, diagnostics and maintenance of the fielded GMD components including all GBIs, Silos, GFC/C nodes, ground launch systems, communications systems, and SBX, Beale AFB, Cobra Dane, and Fylingdales, UK radars on-site and from the manufacturing sites. This effort includes the continued development and validation of maintenance procedures and logistics demonstrations, analysis, repair parts stockage levels, and 24/7 monitoring and diagnostics at Vandenberg AFB, Fort Greely, Joint National Integration Center (JNIC), across the nation-wide GMD Communication Network (GCN) and on board the Sea-Based X-Band Radar (SBX). During this period, the government will develop a competitive logistics acquisition strategy for follow-on maintenance in accordance with service transition plans and the Performance Based Logistics concept.

**FY06 Accomplishments:**

- Provided Contractor Logistics Support (CLS) and technical logistics analysis for Block 2004/2006 fielded capabilities through development of critical corrective maintenance action analysis and procedures, ongoing development of component Interactive Technical Manuals, and component Training Materials.
- Provided logistic infrastructure support through establishment and refinement of GMD Inter-Service Support Agreements and Boeing base infrastructure support at Fort Greely and Adak, AK, Vandenberg AFB, CA, Beale AFB, CA, Eareckson Air Station, AK, and Fylingdales, UK.
- Refined replenishment spares posture through spares metrics development and monitoring, reducing spares every 30 days to reflect true demand data.
- Initiated logistics support and established support base facilities for the SBX.
- Initiated operations and support of the SBX.
- Initiated design and procurement of the SBX mooring at Adak, AK.
- Initiated mooring of the SBX at Adak, AK, and incorporated site support to SBX at Fort Richardson, AK.
- Initiated on-site sustaining engineering, providing on site expertise at each GMD fielded site.

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FY07 Planned Program: <ul style="list-style-type: none"><li>• Further refine CLS sustainment for Block 2004/2006 fielded capabilities through incentivized logistics data collection and analysis response diagnostics.</li><li>• Transition non-mission critical logistic infrastructure support to chartered base support organizations.</li><li>• Continue operations and support of the SBX.</li><li>• Refine spare replenishment posture IAW actual spare usage, and refines level of stockage IAW streamlined maintenance structure.</li><li>• Complete procurement and installation of the SBX mooring at Adak, AK.</li><li>• Continue on-site sustaining engineering through establishment of targeted capability expertise, expanded reliability, availability and maintainability oversight, streamlining maintenance structure.</li><li>• Establish 24/7/365 onsite field support to all fielded assets through CLS onsite/recall personnel.</li><li>• Initiate Fort Greely HEMP Hardened Power distribution upgrades (Shown in DD Form 1391).</li><li>• Initiate stockpile reliability and component aging testing; procure long lead and initiate testing.</li><li>• Initiate security enhancements at Fort Greely, Vandenberg AFB, Eareckson Air Station, and Adak, AK.</li></ul>		
FY08 Planned Program: <ul style="list-style-type: none"><li>• Incorporate performance metrics in CY08 CLS contract for Block 2004/2006 and SBX fielded capabilities, incorporating incentivized mission capable response diagnostics.</li><li>• Continue logistic infrastructure support for mission critical base support tasks.</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>• Develop, validate, verify and field System Level GMD Technical Manuals.</li><li>• Update training materials and sustainment training packages.</li></ul>		
FY09 Planned Program: <ul style="list-style-type: none"><li>• Continue Performance Based Logistics CLS sustainment for Block 2004/2006 fielded capabilities and SBX.</li><li>• Continue logistic infrastructure support for mission critical infrastructure.</li><li>• Continue minimal spare replenishment based on demonstrated PBL response times.</li><li>• Continue on-site sustaining engineering.</li></ul>		

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<ul style="list-style-type: none"> <li>• Initiate Performance Based Logistics (PBL) through full incorporation of PBL metrics.</li> <li>• Continue stockpile reliability and component aging testing.</li> </ul>				
	FY 2006	FY 2007	FY 2008	FY 2009
Program Management	365,905	374,253	0	0
RDT&E Articles (Quantity)	0	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 and manufacturing assurance, configuration management, integrated logistic support, and government manpower and infrastructure to develop, test and sustain the GMD system and components.</p> <p><b>FY06 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• Provided government and contractor program staff and infrastructure for the overall management of the GMD program.</li> <li>• Provided technical and business management support activities, financial management, cost and schedule performance assessment, cost estimation and analysis, configuration management and integration activities.</li> <li>• Performed comprehensive GMD program realignment and transitioned GMD program management support activities from Washington, D.C. to Huntsville, AL.</li> <li>• Continued contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight.</li> <li>• Provided management for GMD program quality assurance, manufacturing assurance, safety assurance and configuration management.</li> <li>• Developed target requirements for the GMD flight test requirements.</li> <li>• Ensured GMD compliance with internal and external direction, policies, and regulations.</li> <li>• Provided Integrated Logistics Support for the GMD program.</li> </ul> <p><b>FY07 Planned Program:</b></p> <ul style="list-style-type: none"> <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 Site implementation.</li> </ul>				

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<ul style="list-style-type: none"> <li>• Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight.</li> <li>• Provide management for GMD program quality assurance, manufacturing assurance, safety assurance and configuration management.</li> <li>• Ensure GMD compliance with internal and external direction, policies, and regulations.</li> <li>• Provide Integrated Logistics Support for the GMD program.</li> </ul>				
	FY 2006	FY 2007	FY 2008	FY 2009
Element Engineering & Integration	192,198	213,390	0	0
RDT&E Articles (Quantity)	0	0	0	0
<p>GMD Element Engineering and Integration (EE&amp;I) provides systems engineering and integration essential for the development and fielding of the functional components of the GMD segment of the BMDS. This program establishes element-level development requirements in the GMD Capabilities Document and ensures these are allocated to the component specifications; complements the BMDS systems engineering capability by providing detailed insight and analysis into component technical and design-specific issues during fabrication, element-level integration, testing and fielding; defines element-level test requirements and objectives and provides element-level analysis and assessments to verify GMD performance; provides engineering, integration, and operations planning supporting the BMDS, including assessment of future fielding options; and defines requirements for design and development of GM component H/W and S/W to implement a safe and secure simultaneous test and operations capability. This capability will allow GMD to continue RDT&amp;E activities with minimal impacts to the BMDS operational capability.</p> <p>FY06 Accomplishments:</p> <ul style="list-style-type: none"> <li>• Completed Block 2006 Delta System Requirements Review (SRR).</li> <li>• Continued software management and specialty engineering.</li> <li>• Continued software verification and validation.</li> <li>• Continued modeling and simulation development.</li> <li>• Continued system analyses, integration, and verification.</li> <li>• Supported integrated ground tests and specialty testing.</li> <li>• Conducted pre- and post-flight test analyses.</li> <li>• Supported the integration and testing of engage on AN/TPY-2 ESG.</li> <li>• Defined a simultaneous test and operations approach.</li> </ul>				

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**FY07 Planned Program:**

- Complete Block 2006 Initial Capability (Integration Phase 4 (IP-4) Integrated Assessment Review (IAR)).
- Complete Block 2006 Delta Preliminary Design Review (PDR).
- Complete Block 2006 Delta Critical Design Review (CDR).
- Continue software management and specialty engineering.
- Continue software verification and validation.
- Continue modeling and simulation development of GMD End-to-End Simulation, and Integration of Embedded Test (ET) into Missile Defense System Exerciser (MDSE).
- Continue system analyses, integration, and verification.
- Support integrated ground tests and specialty testing.
- Conduct pre- and post-flight test analyses.
- Complete the integration and testing of engage on AN/TPY-2 ESG.
- Continue simultaneous test and operations efforts.
- Continue development of Discrimination capabilities.
- Upgrade Hardware-in-the-Loop.
- Continue Fort Greely High Altitude Electromagnetic Pulse (HEMP) hardening enhancements.

	FY 2006	FY 2007	FY 2008	FY 2009
Upgraded Early Warning Radar (UEWR) and Cobra Dane Development	51,260	81,160	0	0
RDT&E Articles (Quantity)	0	0	0	0

Note: Management of Upgraded Early Warning Radar (UEWR) and Cobra Dane development transfers to the MDA BMDS Sensors component, PE 0603884C for FY08 and out.

Upgraded Early Warning Radars (UEWRs) and COBRA DANE Upgrade (CDU) are large, fixed, phased-array surveillance radars used to detect, track, and classify individual targets early in their trajectory. These are multi-mission radars that, in addition to Missile Defense, support other forward users (e.g., other UEWR missions include Missile Warning and Space Surveillance). The UEWR upgrades add new capability to these legacy radars that improves detection, tracking, classification, and reliability/availability performance. These upgrades provide precise tracking early enough to significantly expand the battlespace for the ground-based interceptors. While the UEWRs and CDU, on their own, can provide sufficient

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data to generate a weapons task plan, they can also cue the X-Band radars to the location and trajectory of incoming targets. For UEWR, this program provides for hardware replacement of decades old processing technology and new communications equipment, and the development of new software that supports each mission. For CDU, the program provides for minor changes to existing hardware and new communications equipment, and the development of missile defense software integrated into the existing legacy software.

**FY06 Accomplishments:**

- Fylingdales UK Developmental Test and Evaluation, Operator and Maintenance training was completed in preparation for Operational testing.
- Beale AFB UEWR participated in flight tests and ground tests; test results indicated the overall BMDS radar and tracking capabilities ready for operation with Fire control and Intercept systems.

**FY07 Planned Program:**

- Complete development of operational testing for UEWR (including End-to-End testing) at Fylingdales UK and Beale AFB sites; will prove out system for legacy Integrated Threat Warning and Attack Assessment (ITW/AA) and Missile Defense mission concurrently.
- Continue flight and ground test participation of UEWRs and Cobra Dane.
- Complete Beale AFB and Fylingdales UK modifications through Fylingdales EWR De-modification and Beale Phase II construction and regression testing.
- Correct deficiencies in Cobra Dane leading to Strategic Command (STRATCOM) certification of system.

	FY 2006	FY 2007	FY 2008	FY 2009
Sea-Based X-Band Radar	184,640	110,600	0	0
RDT&E Articles (Quantity)	0	3	0	0

The Sea-Based X-band radar (SBX) is a phased-array radar operating in the X band which is mounted on a commercially designed, self-propelled, semi-submersible oil drilling platform. The vessel has a dynamic positioning capability to enable precision station keeping even in adverse sea states and weather conditions. The X-Band Radar (XBR) part of the SBX is the world's largest X-band radar built with leading edge technology. When fully integrated with the rest of the BMDS it will become the primary midcourse discrimination sensor for the system. X-band technology provides this midcourse sensor with the ability to perform high resolution cued search, acquisition, tracking, and target discrimination to support the GMD element. To perform this effort, highly sophisticated algorithms are designed to enhance target acquisition and discrimination of more complex threat sets and targets which are off-nominal in behavior. Material and electronic component enhancements to improve power output and sensitivity are also developed and integrated into the SBX operating software.

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<p>FY06 Accomplishments:</p> <ul style="list-style-type: none"><li>Continued the development of XBR software build 1.6.1 and continued development of build 2.2.</li><li>Completed Primary Support Base development for the Sea-Based X-Band Radar.</li><li>Supported FTG-02 as a range asset to provide telemetry data to support EKV.</li><li>Initiated Phase I Operational Enhancements (Recommended by the Operational Viability Assessment (OVA) Group).</li><li>Conducted mooring anchor tests and initiated procurement of mooring.</li></ul> <p>FY07 Planned Program:</p> <p>RDT&amp;E Test Articles: Acquisition of XBR software builds 1.6.1 and 2.2 was initiated in FY03 for delivery in FY07.</p> <ul style="list-style-type: none"><li>Complete and deliver software build 1.6.1. The main attribute added was the inclusion of advanced algorithms to improve performance against increasingly more difficult targets and scenarios.</li><li>Complete integration of software build 2.2. The main attributes added into build 2.2 include background diagnostics, enhanced cued search, coherent integration and more robust operational CONOPS.</li><li>Continue flight and ground test support.<ul style="list-style-type: none"><li>FTX-02 - Collect advanced algorithm data and provide system test risk reduction for FTG-04</li><li>FTG-03 - SBX in shadow mode to support risk reduction for GBI engage on SBX ESG in FTG-04</li><li>FTG-04 - Demonstrate engage on SBX</li><li>GT-06-3 - Ground test to demonstrate BMDS system performance against MS-1, MS-2, MS-4 and MS-8 type threats</li></ul></li><li>Complete procurement, installation, and classification of Adak Mooring .</li><li>Conduct pre-deployment readiness efforts.</li><li>Complete Phase I Operational Enhancements to upgrade the SBX capability, which is to complete engineering of SBX Helodeck to obtain Navy and USCG certification, installation of wave sensors and bridge monitoring equipment, complete engineering for vessel mooring modifications, conduct the necessary modifications to the Temporary Emergency Radome Pressurization system to make it a permanent system, and complete engineering for addition of a port side crane and a Quick Launch Response Boat (QLRB).</li><li>Initiate Phase II Operational Enhancements to upgrade the SBX scalability, which is to upgrade the SBX Helodeck to obtain Navy and USCG certification, Installation of the port side crane and QLRB, procure and install acceleration monitors, complete modifications to galley and scullery to upgrade to Navy standards, add enhanced communication architecture to SBX Ops Center, and procure and install emergency generator backup manual control to provide operator capability of restoring emergency power.</li></ul>		

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	FY 2006	FY 2007	FY 2008	FY 2009
Ground Systems	248,252	293,020	94,870	7,670
RDT&E Articles (Quantity)	12	10	7	0

The GMD Ground Systems (GS) enable control and operation of the GMD Element as part of the BMDS. The Fire Control sub-component consists of the GMD Fire Control (GFC), Test Exerciser (TEx), and External Systems Interface (ESI). The communications sub-component consists of (1) GMD Communications Network (GCN) and (2) the In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT). The launch systems subcomponent consists of launch site components (silos, SIVs) and Launch Support Systems (Command Launch Equipment (CLE) and Launch Support Equipment). The Project 0808 Construction requirements are addressed in the GS Accomplishment/Planned Program.

This GMD RDT&E Construction request is further justified in the accompanying DD-1391 Exhibits, RDT&E Construction Data.

**FY06 Accomplishments:**

RDT&E Test Articles: Completed acquisition of nine (9) silos and associated launch support equipment. Completed development of GFC/C software version 6A and Command Launch Equipment (CLE) software build 2.7.2. Completed installation and checkout of an IDT on the SBX.

- Continued flight and ground test support.
- Completed construction of nine (9) additional silos and associated launch support equipment at Fort Greely supporting the install of additional Ground Based Interceptors.
- Completed installation and checkout of an IDT on the SBX to increase our capability to communicate with in-flight interceptors once the SBX is integrated into the BMDS architecture.
- Completed construction of a second IDT facility at Fort Greely.
- Continued acquisition of a second IDT at Fort Greely increasing our capability to communicate with in-flight interceptors once it is integrated into the BMDS architecture.
- Completed development of GFC/C software version 6A and Command Launch Equipment (CLE) software build 2.7.2 which adds additional capabilities including ability to terminate an engagement after GBI is launched, updated sensor load performance models to provide a more accurate representation of predicted Sensor Access and strong authentication to ensure secure processing of critical messages.
- Continued development of GFC/C software version 6B and CLE software build 4.0 which adds additional capabilities including improved fault detection / fault isolation, ability to designate first stage booster drop exclusion zones, incorporate Warfighter requested changes to GFC display (Shot Quality Display; Heavy Decision Support (Second Pass); and Terminate Engagement Decision Support) and upgrade to CLE hardware/software to mitigate obsolescence and support increased GBIs.

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<ul style="list-style-type: none"> <li>• Initiated GMD upgrades to accommodate simultaneous test, operations, and upgrades including a second GFC node at Joint National Integration Center (JNIC).</li> </ul> <p>FY07 Planned Program:            RDT&amp;E Test Articles: Complete acquisition of five (5) silos and associated launch support equipment at Ft Greely. Complete development of GFC/C software version 6B and CLE software build 4.0. Complete installation and checkout of a second IDT at Fort Greely and a second GFC node at JNIC. Complete construction, installation and checkout of a third operational silo at Vandenberg AFB.</p> <ul style="list-style-type: none"> <li>• Complete acquisition of five (5) additional silos and associated launch support equipment at Fort Greely supporting the installation of additional Ground Based Interceptors (Fielding).</li> <li>• Continue flight and ground test support.</li> <li>• Complete installation and checkout of a second IDT at Fort Greely increasing our capability to communicate with in-flight interceptors once it is integrated into the BMDS architecture</li> <li>• Complete acquisition, installation and checkout of a second GFC node at JNIC increasing GMD capability for conducting simultaneous operations, test and upgrades (Fielding).</li> <li>• Complete construction, installation and checkout of a third operational silo allowing for increased quantity of operational GBIs at Vandenberg AFB (Fielding).</li> <li>• Complete fielding of GFC/C software version 6A and CLE software version 2.7.2 which adds additional capabilities including ability to terminate an engage after GBI is launched, updated sensor load performance models to provide a more accurate representation of predicted Sensor Access and strong authentication to ensure secure processing of critical messages. (Fielding).</li> <li>• Complete development of GFC/C software version 6B and CLE software build 4.0 which adds additional capabilities including improved fault detection / fault isolation, ability to designate first stage booster drop exclusion zones, incorporate Warfighter requested changes to GFC display (Shot Quality Display; Heavy Decision Support (Second Pass); and Terminate Engagement Decision Support) and upgrade to CLE hardware/software to mitigate obsolescence and support increased GBIs.</li> <li>• Initiate construction of a second Relocatable IDT (RIDT).</li> <li>• Initiate construction of a fourth operational silo at Vandenberg AFB.</li> <li>• Defer work on 4 additional silos in Missile Field 1 to new missile field at Fort Greely.</li> </ul> <p>FY08 Planned Program:            RDT&amp;E Test Articles: Complete acquisition of five (5) silos and associated launch support equipment at Fort Greely. Complete installation and checkout of a second RIDT at Vandenberg AFB. Complete construction, installation and checkout of a fourth operational silo at Vandenberg AFB.</p>		

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- Complete acquisition of five (5) additional silos and associated launch support equipment at Fort Greely supporting the installation of additional Ground Based Interceptors (Fielding).
- Complete acquisition, installation and checkout of a second Relocatable IDT at Vandenberg AFB (Fielding).
- Complete construction, installation and checkout of a fourth operational silo allowing for increased quantity of operational GBIs at Vandenberg AFB (Fielding).
- Complete GMD upgrades to accommodate simultaneous test, operations, and upgrades.
- Complete fielding of GFC/C software version 6B and CLE software build 4.0 which adds additional capabilities including improved fault detection / fault isolation, ability to designate first stage booster drop exclusion zones, incorporate Warfighter requested changes to GFC display (Shot Quality Display; Heavy Decision Support (Second Pass); and Terminate Engagement Decision Support) and upgrade to CLE hardware/software to mitigate obsolescence and support increased GBIs.

	FY 2006	FY 2007	FY 2008	FY 2009
Ground Based Interceptors	832,350	710,110	68,680	0
RDT&E Articles (Quantity)	8	12	5	2

The GBI development program funds the development of booster and EKV technologies and provides developmental assets for flight-testing. GMD has successfully demonstrated a hit-to-kill capability in five (5) separate flight tests. These interceptors will enhance the BMDS capability against long and intermediate range ballistic missile attacks through fielding up to thirty (30) operational missiles in Block 04/06.

**FY06 Accomplishments:**

RDT&E Test Articles: Completed acquisition of two (2) GBIs (Flight Test) and two (2) GBIs (Ground Test). Completed acquisition of four (4) GBIs (Fielding).

- Demonstrated Interceptor Performance in FT-01 and FTG-02, meeting primary test objectives.
- Completed GBI emplacements through LDC-13.
- Completed acquisition of four (4) GBIs (Fielding).
- Completed acquisition of two (2) GBIs (Flight Test).
- Completed acquisition of two (2) GBIs (Ground Test) for risk reduction ground testing.
- Continued GBI ground testing, system level simulation, and Verification, Validation, and Accreditation activities.
- Initiated GBI producibility / reliability improvements.
- Continued EKV processor upgrade.

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**FY07 Planned Program:**

RDT&E Test Articles: Complete acquisition of two (2) GBIs (Flight Test). Complete acquisition of ten (10) GBIs (Fielding).

- Support FTG-03 and FTG-04 Flight Tests.
- Eliminate BV+ GBIs (6 Fielding, 1 Booster Test, and 1 Flight Test) and initiate replacement (in project 0908) of six (6) OBV GBIs (Fielding) and one (1) OBV GBI (Flight Test).
- Complete acquisition of ten (10) GBIs (Fielding).
- Complete acquisition of two (2) GBIs (Flight Test).
- Continue GBI ground testing, system level simulation, and Verification, Validation, and Accreditation activities.
- Complete GBI producibility / reliability improvements.
- Complete GBI emplacements through LDC-23.
- Complete EKV processor upgrade.
- Initiate GBI Refurbishment Program

**FY08 Planned Program:**

- Complete acquisition of five (5) GBIs (Fielding).

**FY09 Planned Program:**

- Complete acquisition of two (2) GBIs (Fielding).

	FY 2006	FY 2007	FY 2008	FY 2009
Element Test and Evaluation	173,960	305,340	5,158	0
RDT&E Articles (Quantity)	2	3	0	0

GMD Test and Evaluation plans and executes GMD ground and flight tests to evaluate and verify GMD system performance and collect data to anchor models and simulations. GMD Test and Evaluation utilizes a comprehensive infrastructure of ground-test facilities, ranges, sensors and instrumentation resources providing critical risk reduction and measurement of system performance for all GMD element components. This infrastructure allows the element engineers to successfully model and simulate test results into projections of future system performance. 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.

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<p>FY06 Accomplishments:  RDT&amp;E Test Articles: Completed acquisition of two (2) targets.  Flight Test Objectives:</p> <ul style="list-style-type: none"> <li>• FT 04-01: Demonstrate the ability of the Beale UEWR to provide Weapons Task Plan quality track data and demonstrate West Coast test infrastructure.</li> <li>• FTG-02: Demonstrate that GMD has the capability to launch an interceptor from Vandenberg AFB and can perform functions that permit EKV sensor characterization and evaluation of endgame algorithms.</li> </ul> <p>Ground Test Objectives:</p> <ul style="list-style-type: none"> <li>• GTI-01: Assess BMDS Block 04 functionality and interoperability with AN/TPY-2 radar (formally know as Forward-Based X-Band Radar Transportable (FBX-T)), C2BMC and GMD. Assess ability to simultaneously execute multiple Block 04 ESGs using multiple raid sizes.</li> <li>• GT-04-1A: Assess GMD configuration upgrades and performance enhancements and capability to Launch On AN/TPY-2.</li> <li>• GT-04-2A.3-4 Assess AN/TPY-2 radar as a launch and engage sensor, from multiple locations over the two phases into the GMD configuration.</li> <li>• Conducted Flight Tests FT 04-01 and FTG-02. <ul style="list-style-type: none"> <li>○ FT 04-01 demonstrated Upgraded Early Warning Radar (UEWR) Surrogate system performance against a nominal target, launched from Kodiak Launch Complex (KLC), Kodiak, Alaska. The flight also involved the first simulated interceptor launch controlled from the Joint National Integration Center (JNIC). The flight was a system-level test to demonstrate system integration, interfaces, and performance.</li> <li>○ FTG-02 was successfully conducted on 1 Sep 06. FTG-02 demonstrated the BMDS functionality for Target launch from Kodiak Launch Complex (KLC) &amp; GBI/OBV launch from Vandenberg, AFB and the functionality to support GBI Engage on UEWR (Beale, AFB).</li> </ul> </li> <li>• Conducted the first BMDS integrated ground test (GTI-01) with the GMD element represented by Integrated System Test Capability - 1 (ISTC-1). GTI-01 was the first BMDS-level Integrated Ground Test intended to meet the requirements of the MDA Integrated Master Test Plan (IMTP). The Combined Test Force (CTF) conducted GTI-01 utilizing Missile Defense System Exerciser (MDSE) Spiral 6.0. GTI-01 was the first test event to provide complete BMDS Block 04 Hardware-in-the-Loop (HWIL) capability with the exception of Sea-Based X-Band Radar (XBR) (SBX) and Fylingdales UK UEWR. Participating elements were: C2BMC, GMD, Aegis BMD, AN/TPY-2, Space Based Infrared System Management Control System (SBIRS MCS), Patriot, Joint Test Action Group (JTAG), Joint Range Extension (JRE), Test Control System (TCS) and TCES.</li> <li>• Conducted Integrated Ground Test (IGT). GT-04-1A demonstrated integrated GMD performance using for the first time the AN/TPY-2 (Forward Based X-Band Radar - Transportable (FBX-T)) and upgraded component software, as well the event verified no degradation to the Limited Defense Capability -2 (LDC-2) fielded configuration.</li> </ul>		

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<ul style="list-style-type: none"><li>• Conducted Distributed Ground Test (DGT). GT-04-2A.1-4 was the first series of distributed ground tests to integrate the AN/TPY-2 radar as a launch and engage sensor, from multiple locations over the four phases, into the GMD configuration. This was also the first test to exercise the GFC dormant node approach in distributed testing. There were several components that demonstrated successful software upgrades, to include GFC, UEWR and SBIRS during this event.</li><li>• Completed construction on the Integrated System Test Capability (ISTC)-2 upgrade of the GFC/C labs to match the fielded configuration of GFC/C labs at Fort Greely and JNIC.</li><li>• Delivered and installed a new generation of GFC/C software (6A) into Prime Consolidated Integration Lab (PCIL) 1 &amp; 2 and ISTC-1 STLs (System Test Labs).</li><li>• Delivered new and additional processes to PCIL/ISTC for XBR testing.</li><li>• Continued operation and maintenance of four System Test Labs</li><li>• (PCIL-1, -2, ISTC-1 and -2).</li><li>• Conducted Pre-Mission Test (PMT) to support the Flight Tests and Post Flight Reconstruction (PFR) (ISTC-2).</li><li>• Performed pre- and post-test analyses of all aforementioned test events.</li><li>• Performed analyses to define target requirements.</li><li>• Continued ground and flight test planning, design, and scheduling.</li><li>• Assessed previous flight and ground test results from data analysis and incorporated in future test objectives.</li></ul> <p>FY07 Planned Program: RDT&amp;E Test Articles: Acquisition of three (3) targets initiated in FY05 for delivery in FY07. Flight Test Objectives:</p> <ul style="list-style-type: none"><li>• FTG-03: Demonstrate the functionality of the GBI engage on UEWR Beale AFB engagement sequence group (ESG) for a GBI launched from Vandenberg AFB performing all functions through acquisition, discrimination, transition to terminal, and intercepting the lethal object.</li><li>• FTG-04: Demonstrate the functionality of the GBI engage on SBX ESG for a GBI launched from Vandenberg AFB performing all functions through acquisition, discrimination, transition to terminal, and intercepting the lethal object from a live target complex launched from Kodiak; demonstrate Aegis cueing of SBX radar.</li><li>• FTX-02: Demonstrate GBI engage on SBX ESG through a simulated intercept of a live target; collect SBX data to support assessment of radar functions as a risk reduction path for FTG-04.</li></ul>		

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<p>Ground Test Objectives:</p> <ul style="list-style-type: none"> <li>• GT-04-3: Demonstrate the readiness of the GMD Block 06 initial capability upgrades including SBX and Fylingdales UK UEWR for field integration and BMDS ground tests.</li> <li>• GT-04-4: Verify the GMD GFC/C 6A system software upgrade; Demonstrate GMD system is consistent with previously demonstrated behavior for Block 04 ESGs; demonstrate GMD capability to perform Block 06 ESGs.</li> <li>• GTD-01: Assess BMDS ability to simultaneously execute multiple Block 04 Engagement Sequence Groups (ESG) using multiple raid sizes; assess Block 04 functionality and interoperability; demonstrate AN/TPY-2 functionality and interoperability with BMDS.</li> <li>• GTI-02: assess BMDS ability to simultaneously execute multiple Block 06 ESGs using theater and strategic assets with Block 06 scenarios; Assess BMDS initial Block 06 functionality and interoperability with THAAD, AN/TPY-2, C2BMC, GMD, Aegis, SBIRS, and PATRIOT; exercise functionality used in applicable Block 06 ESGs with priority on: THAAD engage on AN/TPY-2, and ESGs with AN/TPY-2 as a sensor.</li> <li>• Conduct GMD Flight Tests FTG-03 and FTG-04.             <ul style="list-style-type: none"> <li>○ FTG-03 is a planned intercept mission exercising the GBI Engage On Beale UEWR for a GBI launched from VAFB and a target launched from Kodiak Launch Complex (KLC). Additionally, FTG-03 adds SBX and Aegis as stand-alone sensors for future test risk reduction.</li> <li>○ FTG-04 is a planned intercept mission exercising the GBI Engage On SBX for a GBI launched from VAFB and a target (including a complex target scene) launched from Kodiak Launch Complex (KLC). Additionally, this test will demonstrate Aegis cueing of the SBX radar for the first time.</li> </ul> </li> <li>• Participate in BMDS Flight Test FTX-02 which is a BMDS level flight test event consisting of a target launched from Vandenberg AFB with a simulated interceptor executing the BMDS functionality of GBI Engage On SBX with an Aegis cue. This test will also be used as a risk reduction event for SBX participation in FTG-04.</li> <li>• Conduct Integrated Ground Test (IGT) (development) GT-04-3. GT-04-3 demonstrates the readiness of the Ground-Based Midcourse Defense (GMD) Block 06 initial capability upgrades including for the first time the Sea-Based X-Band Radar (SBX) and Fylingdales UK UEWR, as well as the new Ground Fire Control (GFC) build 6A for field integration and Ballistic Missile Defense Systems (BMDS) ground tests.</li> <li>• Conduct Distributed Ground Tests (DGT) GT-04-4-A and GT-04-4-B. GT-04-4 is a distributed system-level test utilizing an operational test architecture reflecting the GMD element at the time of event execution. GT 04-4A demonstrates for the first time the end-to-end integration of the UEWR at Fylingdales UK and Sea Based Radar into the GMD element from simulated target signatures to the delivery of the Weapons Task Plan to the Command Launch Equipment. This event will also include the installation of GFC/C 6a software occurring first at the JNIC GFC/C node (phase A) then the Fort Greely (FGA) node (phase B). In addition, GT 04-4 provides the GM element baseline to take forward to the next BMDS-level distributed ground test (GTD-02).</li> <li>• Participate in a BMDS level integrated ground test (GTI-02) as the GMD element. GTI-02 will assess BMDS, with GMD participation, ability to simultaneously execute multiple Block 06 engagement sequence groups (ESGs) using theater and strategic assets with Block 06 scenarios.</li> </ul>		

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<p>Participants are: C2BMC, GMD, Aegis BMD, AN/TPY-2, Space Based Infrared System Management Control System (SBIRS MCS), Patriot, Joint Test Action Group (JTAG), Joint Range Extension (JRE), Test Control System (TCS) and TCES.</p> <ul style="list-style-type: none"><li>• Participate in the first BMDS level distributed ground test (GTD-01) as the GMD element. GTD-01 was led by the Missile Defense Agency combined test force. GMD utilized all deployed components of the system and integrated with the remainder of the BMDS via the GMD Fire Control/ Communication (GFC/C)/Command &amp; Control, Battle Management and Communication (C2BMC) interface. GMD hardware and software configuration were the same as GMD Ground Test 04-2 (GT 04-2), conducted earlier in FY06. Participation in this test completed the lab/field test cycle for the first BMDS Ground Test Campaign. Additional BMDS elements were: C2BMC, Aegis BMD, Space-Based Infrared System (SBIRS), and the AN/TPY-2 radar (formally know as Forward-Based X-Band Radar Transportable (FBX-T)).</li><li>• Complete acquisition of targets.</li><li>• Support one (1) BMDS GTX test (GTX-02-A). GTX-02-A is a BMDS level ground test that assess the BMDS' ability to simultaneously execute Block 06 ESGs using theater assets with Block 06 scenarios with priority on THAAD Engage On AN/TPY-2. GMD provides the GFC/C and the JNIC Bell Lab for this event. Perform pre- and post-test analyses of all ground and flight in the System Test Analysis and Reporting (STAR) Lab.</li><li>• Perform analyses to define target requirements (STAR Lab).</li><li>• Assess previous flight and ground test results from data analysis and incorporate in future test objectives.</li><li>• Continue operation and maintenance of System Test Lab, PCIL -1 and -2, and ISTC-2. This transitions ISTC-1 to MDA (MDA to start funding Operations and Sustainment October 2007).</li><li>• Upgrade ISTC-1 and 2 with the Capability Enhancement-2 configuration. This upgrade will allow the System Test Labs (STLs) to support up to 20 interceptor capability for all future test events.</li><li>• Upgrade PCIL-1 and -2 to support Pre-Mission Tests (PMTs) and Pre-Distributed Ground Tests (DGTs).</li><li>• Conduct Pre-Mission Test (PMT) to support the Flight Tests (FTG-03 and FTG-04) and Post Flight Reconstruction (PFR) (ISTC-2).</li></ul> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"><li>• Completes Target Checkout for two (2) targets.</li></ul>		

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<b>C. Other Program Funding Summary</b>									
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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<b><u>D. Acquisition Strategy</u></b> GMD will continue to follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks and spiral upgrades. The Department has structured the missile defense acquisition strategy to continually provide needed upgrades to the GMD system components within these two-years blocks, or as soon as practical. 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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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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Element Engineering &amp; Integration</b>										
Systems Engineering & Integration	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	402,698	156,553	1/2Q	0	N/A	0	N/A	559,251
<b>Upgraded Early Warning Radar (UEWR) and Cobra Dane Development</b>										
Upgraded Early Warning Radar (UEWR) Development and Cobra Dane Development	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/MA/VA/UK	130,397	70,429	1/2Q	0	N/A	0	N/A	200,826
<b>Sea-Based X-Band Radar</b>										
Sea-Based X-Band Radar	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/HI/MA/TX/ VA	213,422	100,751	1/2Q	0	N/A	0	N/A	314,173
<b>Ground Systems</b>										
Ground Systems	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/FL/VA	554,175	246,567	1/2Q	94,870	1/2Q	7,670	1/2Q	903,282
<b>Ground Based Interceptors</b>										
Ground Based Interceptor (GBI)	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/UT/VA	1,560,448	705,080	1/2Q	68,680	1/2Q	0	N/A	2,334,208
<b>Element Test and Evaluation</b>										
	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	384,766	171,515	1/2Q	0	4Q	0	N/A	556,281
<b>Subtotal Product Development</b>			<b>3,245,906</b>	<b>1,450,895</b>		<b>163,550</b>		<b>7,670</b>		<b>4,868,021</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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**Remarks**

The existing prime contract is completed at the end of first quarter FY09; funding amounts shown in the R-3 for the remaining three quarters of FY09 are estimates.

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Operations and Sustainment</b>										
	SS/CPAF	Boeing/ AL/AK/CA	76,100	419,959	1/2Q	411,240	1/2Q	360,149	1/2Q	1,267,448
GFX	MIPR	SPAWAR/ CA	1,000	1,067	1/2Q	1,056	1/2Q	930	1/2Q	4,053
	MIPR	AMCOM SED/ AL	873	1,126	1/2Q	1,115	1/2Q	981	1/2Q	4,095
	MIPR	DISA/ VA	21,897	18,207	1/2Q	18,025	1/2Q	17,845	1/2Q	75,974
	MIPR	AMCOM/ AL	826	1,826	1/2Q	1,808	1/2Q	1,591	1/2Q	6,051
	MIPR	NIST/ OH	688	1,266	1/2Q	1,253	1/2Q	1,103	1/2Q	4,310
	MIPR	L3 Communications/ AL	2,894	1,440	1/2Q	1,426	1/2Q	1,255	1/2Q	7,015
	MIPR	SMDC FGA/ AL	5,349	7,000	1/2Q	6,930	1/2Q	6,098	1/2Q	25,377
	MIPR	611th Air Spt Grp, Elmendorf AFB/ AK	5,639	9,500	1/2Q	9,405	1/2Q	8,276	1/2Q	32,820
	MIPR	VAFB/CA	1,050	2,600	1/2Q	2,574	1/2Q	2,265	1/2Q	8,489

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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/Oblg Date	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
	MIPR	Hill AFB/UT	10	130	1/2Q	128	1/2Q	110	1/2Q	378
Logistics	C/CPFF	L3 Communications/AL	6,553	3,200	1/2Q	3,168	1/2Q	2,788	1/2Q	15,709
Protection	SS/CPFF	SDC/AK	1,400	1,500	1/2Q	1,545	1/2Q	1,591	1/2Q	6,036
	SS/CPFF	C&A/AL	4,200	4,400	1/2Q	4,532	1/2Q	4,668	1/2Q	17,800
	MIPR	MDA/AL	502	11,064	1/2Q	11,396	1/2Q	11,738	1/2Q	34,700
JNIC (GML)	SS/CPAF	JNIC/CO	5,254	5,525	1/2Q	5,690	1/2Q	5,861	1/2Q	22,330
	SS/CPAF	L3 Communications/CO	3,626	2,740	1/2Q	2,822	1/2Q	2,907	1/2Q	12,095
SPT HSV	C/CPAF	CSC/AL	0	4,890	1/2Q	4,670	1/2Q	4,440	1/2Q	14,000
GFX	MIPR	Fylingdales/UK	20	154	1/2Q	152	1/2Q	134	1/2Q	460
	MIPR	FGA Chugach/AK	100	1,000	1/2Q	998	1/2Q	848	1/2Q	2,946
	MIPR	SMDC/AL	150	1,500	1/2Q	1,485	1/2Q	1,265	1/2Q	4,400
	MIPR	USARAK/AK	50	595	1/2Q	499	1/2Q	424	1/2Q	1,568
	MIPR	AMCOM/AL, HI. AK	350	3,600	1/2Q	3,564	1/2Q	3,034	1/2Q	10,548
<b>Program Management</b>										
SPT HSV	C/CPAF	CSC/AL	339,754	29,420	1/2Q	0	N/A	0	N/A	369,174
SPT HSV (SETAC)	C/CPAF	BAE/AL	4,265	1,500	1/2Q	0	N/A	0	N/A	5,765
	MIPR	MDA/AL/VA	11,897	26,336	1/2Q	0	N/A	0	N/A	38,233
	MIPR	AMCOM SMDC/AL/VA	37,436	12,458	1/2Q	0	N/A	0	N/A	49,894
Information Technology	SS/CPFF	SAIC/AL	7,734	8,458	1/2Q	0	N/A	0	N/A	16,192
	SS/CPFF	BAE Systems/AL	2,450	2,000	1/2Q	0	N/A	0	N/A	4,450
	MIPR	AMCOM	3,443	600	1/2Q	0	N/A	0	N/A	4,043

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	MIPR	SMDC/AL	900	500	1/2Q	0	N/A	0	N/A	1,400
TSM	MIPR	SMDC/AL/DC	4,185	6,094	1/2Q	0	N/A	0	N/A	10,279
	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	0	217,796	1/2Q	0	N/A	0	N/A	217,796
Manufacturing	SS/CPFF	BAE Systems/ AL	2,990	2,851	1/2Q	0	N/A	0	N/A	5,841
	MIPR	AMRDEC/AL	1,423	471	1/2Q	0	N/A	0	N/A	1,894
	MIPR	SMDC/AL	20	0	4Q	0	N/A	0	N/A	20
	SS/CPFF	TSI/AL	212	63	1/2Q	0	N/A	0	N/A	275
	C/CPAF	COLSA/AL	2,208	0	4Q	0	N/A	0	N/A	2,208
	C/CPAF	CSC/AL	171	0	4Q	0	N/A	0	N/A	171
	MIPR	MDA/AL, VA	0	62,600	1/2Q	0	N/A	0	N/A	62,600
Information Technology	MIPR	NSA/Various	4,875	3,106	1/2Q	0	N/A	0	N/A	7,981
<b>Element Engineering &amp; Integration</b>										
EE&I	MIPR	AMCOM/AL	3,596	5,952	1/2Q	0	N/A	0	N/A	9,548
	MIPR	NSWC/VA	11,832	3,000	1/2Q	0	N/A	0	N/A	14,832
	MIPR	John Hopkins/ MD	2,005	3,975	1/2Q	0	N/A	0	N/A	5,980
	MIPR	MIT Lincoln Labs/MA	10,060	1,800	1/2Q	0	N/A	0	N/A	11,860
	MIPR	JNIC/CO	11,272	2,100	1/2Q	0	N/A	0	N/A	13,372
	C/CPAF	EG&G/VA	2,306	3,000	1/2Q	0	N/A	0	N/A	5,306
	FFRDC	MITRE/MA	412	3,600	1/2Q	0	N/A	0	N/A	4,012
	C/CPAF	TSI/AL	2,648	1,955	1/2Q	0	N/A	0	N/A	4,603
	C/CPAF	Various/ AL/NM/VA	1,446	445	1/2Q	0	N/A	0	N/A	1,891
SPT HSV	C/CPAF	CSC/AL	0	26,880	1/2Q	0	N/A	0	N/A	26,880

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EE&I	MIPR	Sandia/NM	0	600	1/2Q	0	N/A	0	N/A	600
	C/CPAF	CSC/AL	0	144	1/2Q	0	N/A	0	N/A	144
	C/CPAF	BAE/AL	0	86	1/2Q	0	N/A	0	N/A	86
	C/CPAF	Aerospace/AL	0	300	1/2Q	0	N/A	0	N/A	300
	C/CPAF	IntelCorp/AL	0	700	1/2Q	0	N/A	0	N/A	700
	MIPR	SMDC STEPAL/AL	55	800	1/2Q	0	N/A	0	N/A	855
	C/CPAF	CSC LTAP/AL, VA	300	1,500	1/2Q	0	N/A	0	N/A	1,800
<b>Upgraded Early Warning Radar (UEWR) and Cobra Dane Development</b>										
	FFRDC	MITRE/MA	4,383	4,000	1/2Q	0	N/A	0	N/A	8,383
	C/CPFF	Sencom/MA	4,674	4,000	1/2Q	0	N/A	0	N/A	8,674
	C/CPFF	ARCTEC/CA	1,575	1,200	1/2Q	0	N/A	0	N/A	2,775
	MIPR	ESC/MA	1,910	1,531	1/2Q	0	N/A	0	N/A	3,441
<b>Sea-Based X-Band Radar</b>										
	C/FP	BAE/AL	20,595	3,723	1/2Q	0	N/A	0	N/A	24,318
	MIPR	NAVFAC/HI	2,375	5,919	1/2Q	0	N/A	0	N/A	8,294
	MIPR	USCG/HI	1,000	117	1/2Q	0	N/A	0	N/A	1,117
	FFRDC	GA Tech/GA	891	90	1/2Q	0	N/A	0	N/A	981
<b>Ground Systems</b>										
	FFRDC	MITRE/HSV, AL	3,761	600	1/2Q	0	N/A	0	N/A	4,361
	C/FP	TSI/HSV, AL	5,775	4,216	1/2Q	0	N/A	0	N/A	9,991
	C/CPFF	CSC/AL	2,020	8,590	1/2Q	0	N/A	0	N/A	10,610
	MIPR	Various/AL/MD/VA	1,500	183	N/A	0	N/A	0	N/A	1,683
	MIPR	USACE/AL	1,635	1,500	1/2Q	0	N/A	0	N/A	3,135

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
	MIPR	AMRDEC/AL	0	1,000	1/2Q	0	N/A	0	N/A	1,000
	C/CPFF	L3 Communications/ AL	1,911	1,654	1/2Q	0	N/A	0	N/A	3,565
	C/CPFF	TSI/AL	1,271	1,230	1/2Q	0	N/A	0	N/A	2,501
Facilities Construction	MIPR	USACE/AL	19,385	22,400	1/2Q	0	N/A	0	N/A	41,785
SPT HSV	C/CPAF	CSC/AL	0	5,080	N/A	0	N/A	0	N/A	5,080
<b>Ground Based Interceptors</b>										
	SS/FP	BAE/AL	23,095	3,510	1/2Q	0	N/A	0	N/A	26,605
	SS/FP	TSI/AL	16,918	860	1/2Q	0	N/A	0	N/A	17,778
	MIPR	AMCOM/AL	2,392	648	1/2Q	0	N/A	0	N/A	3,040
	MIPR	Various	3,102	12	1/2Q	0	N/A	0	N/A	3,114
Subtotal Support Costs			728,594	1,007,442		495,481		440,301		2,671,818

**Remarks**

The existing prime contract is completed at the end of first quarter FY09; funding amounts shown in the R-3 for the remaining three quarters of FY09 are estimates.

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Element Test and Evaluation</b>										
GMD T&E	MIPR	SMDC/AL	4,529	1,480	N/A	0	N/A	0	N/A	6,009
	C/CPFF	IEC/CA	3,265	841	1/2Q	0	N/A	0	N/A	4,106
	MIPR	NAWCWD/ HI	2,109	1,408	1/2Q	0	N/A	0	N/A	3,517

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Targets	MIPR	MDA/AL	103,479	67,088	1/2Q	5,158	1/2Q	0	N/A	175,725
	C/CPFF	Various	866	303	1/2Q	0	N/A	0	N/A	1,169
	MIPR	DISA/AL	9,298	2,507	1/2Q	0	N/A	0	N/A	11,805
	MIPR	Aero Systems Center, Kirtland AFB/NM	2,161	2,281	1/2Q	0	N/A	0	N/A	4,442
	MIPR	US Army Space CMD, Peterson AFB/CO	1,132	3,400	1/2Q	0	N/A	0	N/A	4,532
	MIPR	VAFB/CA	6,985	8,749	1/2Q	0	N/A	0	N/A	15,734
	MIPR	RTTC/AL	1,137	799	N/A	0	N/A	0	N/A	1,936
	MIPR	PRST/HI	2,107	3,714	N/A	0	N/A	0	N/A	5,821
	C/CPFF	Gray/AL	1,214	1,421	1/2Q	0	N/A	0	N/A	2,635
	C/CPFF	SMC/CA	1,093	350	1/2Q	0	N/A	0	N/A	1,443
	MIPR	Maritime Adm/AL	0	1,480	1/2Q	0	N/A	0	N/A	1,480
	MIPR	AMCOM/NM	1,203	1,205	1/2Q	0	N/A	0	N/A	2,408
	MIPR	NAVSEA/MD	1,061	1,162	1/2Q	0	N/A	0	N/A	2,223
	MIPR	DISA/AL	9,298	2,507	1/2Q	0	N/A	0	N/A	11,805
SPT HSV	C/CPAF	CSC/AL	0	27,730	1/2Q	0	N/A	0	N/A	27,730
T&E	MIPR	VAFB/CA	8,209	5,400	1/2Q	0	N/A	0	N/A	13,609
Subtotal Test and Evaluation			159,146	133,825		5,158		0		298,129
<b>Remarks</b>										

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</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>IV. Management Services Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										

**Remarks**

Project Total Cost			4,133,646	2,592,162		664,189		447,971		7,837,968
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**Remarks**

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>February 2007</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	2006				2007				2008				2009				2010				2011				2012				2013							
	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>																																				
FT-1	▲																																			
FTG-2				▲																																
FTG-3								Δ																												
FTG-4								Δ																												
FTG-5												Δ																								
FTG-6												Δ																								
FTG-7																Δ																				
FTG-X																Δ																				
FTG-X (2)																				Δ																
FTG-X (3)																								Δ												
FTG-X (4)																												Δ								
FTG-X (5)																																Δ				
FTG-X (6)																																				Δ

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 February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>Flight Tests</b>								
FT-1	1Q							
FTG-2	4Q							
FTG-3		3Q						
FTG-4		4Q						
FTG-5			1Q					
FTG-6			3Q					
FTG-7				1Q				
FTG-X				3Q				
FTG-X (2)					1Q			
FTG-X (3)					3Q			
FTG-X (4)						1Q		
FTG-X (5)						3Q		
FTG-X (6)							1Q	
FTG-X (7)							3Q	
FTG-X (8)								1Q
FTG-X (9)								3Q
<b>Radar Certification Test</b>								
FT 04-1	2Q							
<b>BMDS Certification</b>								
FTX-02		2Q						
FTS-01			3Q					
FTX-X				2Q				
FTX-X (2)					2Q			
FTX-X (3)						2Q		
FTX-X (4)							2Q	
FTX-X (5)								2Q
<b>Integrated/Distributed Ground Tests</b>								
GT 04-2.1 (phase 1) Runs for Record	1Q							
GT 04-2.2 Runs for Record	3Q							
GT 04-2.3 Runs for Record	3Q							

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
GT 04-2.4 Runs for Record	4Q							
GTD-01		1Q						
GTX-2A		2Q						
GT-04-3 (IGT-6)		2Q						
GT-04-4A		2Q						
GT-04-4B (DGT-3B)		3Q						
GTI-02		4Q						
GT-06-3 (IGT-7)			1Q					
GT-06-4A (DGT)			1Q					
GTD-02			1Q					
GTX-3			2Q					
GTI-03			3Q					
GT-06-4B (DGT)			3Q					
GTD-03			4Q					
GTX-4				2Q				
GTI-4				3Q				
GTD-4				4Q				
IGT-X					1Q			
GTX-5					2Q			
GTI-5					3Q			
DGT-X					3Q			
GTD-5					4Q			
GTX-6						2Q		
GTI-6						3Q		
GTD-6						4Q		
IGT-X(2)							1Q	
GTX-7							2Q	
GTI-7							3Q	
DGT-X (2)							3Q	
GTD-7							4Q	
GTX-8								2Q

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
GTI-8								3Q
GTD-8								4Q
<b>Capability Enhancement GBIs</b>								
LDC Missiles 10-13	1Q-4Q							
LDC Missiles 14-18		1Q-2Q						
LDC Missiles 19-23		3Q-4Q						
LDC Missile 24			1Q					
LDC Missiles 25-44			2Q-4Q	1Q-4Q	1Q-4Q			
LDC Missiles 45-54						4Q	1Q-3Q	
<b>SBX</b>								
SBX Integration			2Q					

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2007</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>				
COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development	68,308	338,874	1,603,667	1,305,751	495,719	336,161	0	0
RDT&E Articles Qty	0	0	7	8	9	11	0	0
<i>Note: Management of Upgraded Early Warning Radar (UEWR) and Cobra Dane Development transfers to the MDA BMDS Sensors component (MDA/SN) PE 0603884C for FY08 and out.</i>								
<b><u>A. Mission Description and Budget Item Justification</u></b>								
Block 2008 (Project 0908) provides the funding for the development and fielding of incremental component capability enhancements to Block 2006, such as fielding of enhanced capabilities to detect, track, intercept and defeat ballistic missile threats; 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.								
The GMD Block 2008 development program provides an improvement in the ability to engage evolving threats by testing and fielding advanced discrimination algorithms. This capability will result in an upgraded release of Ground Systems (GS) and Exoatmospheric Kill Vehicle (EKV) software. During this block, maintenance builds will also be delivered to implement changes to address test findings and assure that the warfighter has a robust and stable system.								
The Block 2008 GMD flight and ground test program is designed to evaluate and verify GMD system performance against a broader range of threats and collect data to further anchor models and simulations. One Integrated Ground Test (IGT) / Distributed Ground Test (DGT) will be conducted that will verify GMD capabilities and support decisions to deploy increased capabilities to the field. In addition, four GMD flight tests will be conducted and two BMDS level flight tests will be supported to demonstrate an increasing level of element capability to defeat realistic threat complexes. Verification of system performance will be completed by the running of models and simulations that have been validated with data from the flight and ground test program.								
ESGs are demonstrated in the GMD Integrated Test Program. Capabilities of the BMDS will be enhanced as the number of operationally available ESGs and the depth of inventory increases. During Block 2008, GMD will demonstrate the capability in two additional ESGs:								
<ul style="list-style-type: none"> <li>• Launch on UEWR (Thule)</li> <li>• Engage on UEWR (Thule)</li> </ul>								

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date <b>February 2007</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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Block 2008 funding will support the fielding of additional interceptors. Construction of a third missile field at Fort Greely, AK will be completed and fourteen interceptors (with associated ground hardware) will be installed during this block. The resources to operate and sustain the GMD element are also provided within the Block 2008 funding profile. Contractor Logistics Support (CLS) and logistics infrastructure will be supplied for the emplaced GBIs, sensors, and GS components.

**B. Accomplishments/Planned Program**

	FY 2006	FY 2007	FY 2008	FY 2009
Program Management	0	0	267,267	293,081
RDT&E Articles (Quantity)	0	0	0	0

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 and manufacturing assurance, configuration management, integrated logistic support, and government manpower and infrastructure to develop, test and sustain the GMD system and components.

**FY08 Planned Program:**

- 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 government and contractor program management for Third missile Site.
- 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.

**FY09 Planned Program:**

- 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.

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</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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- Provide technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, configuration management and integration activities.
- Provide government and contractor program management for third missile site.
- 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.
- Designate and implement a “Mission Assurance and Manufacturing Engineering Program” under the new contract for remaining FY09 (3Q's). Program will include Quality, Configuration, Management, Manufacturing, Engineering and Safety.

	FY 2006	FY 2007	FY 2008	FY 2009
Element Engineering and Integration	0	0	189,080	203,500
RDT&E Articles (Quantity)	0	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. This program establishes element-level development requirements in the GMD Capabilities Document and ensures these are allocated to the component specifications. Complements the BMDS systems engineering capability by providing detailed insight and analysis into component technical and design-specific issues during fabrication, element-level integration, testing and fielding; defines element-level test requirements and objectives and provides element-level analysis and assessments to verify GMD performance; and provides engineering, integration, and operations planning supporting the BMDS, including assessment of future fielding options. Additionally, the EE&I program integrates Advanced Discrimination via extended phenomenology measurements to improve the classification in terms of mass, shape and dynamics: refine accuracy measurements in terms of position, orientation and velocity; and develop multi-sensor multi-phenomenology correlation and integration.

**FY08 Planned Program:**

- Continue software management and specialty engineering.
- Continue software verification and validation.
- Continue modeling and simulation development.
- Continue system analyses, integration, and verification.
- Support integrated ground tests and specialty testing.
- Conduct pre- and post-flight test analyses.

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</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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- Include fielding of Ground Systems Software Version 6B adding capability for Category-B engagement support (Boost Phase Divert Planning), major additions of Human-in-Control support tools and infrastructure upgrades.
- Include fielding of Command Launch Equipment (CLE) Software Version 4.0 adding new Launch Support Equipment (LSE) hardware, and ordering of multiple Weapon Task Plans according to launch times.
- Continue Fort Greely HEMP hardening enhancements.
- Initiate system engineering and integration efforts for Third Site.

**FY09 Planned Program:**

- Continue software management and specialty engineering.
- Continue software verification and validation.
- Continue modeling and simulation development.
- Continue system analyses, integration, and verification.
- Support integrated ground tests and specialty testing.
- Conduct pre- and post-flight test analyses.
- Complete the integration and testing of engage on / launch on UEWR (Thule).
- Integrate an Advanced Discrimination capability into the GMD system.
- Continue Fort Greely HEMP hardening.
- Continue system engineering and integration efforts for Third Site.

	FY 2006	FY 2007	FY 2008	FY 2009
Sea-Based X-Band Radar	0	0	44,710	29,030
RDT&E Articles (Quantity)	0	0	1	0

The Sea-Based X-band radar (SBX) is a phased-array radar operating in the X-band which is mounted on a commercially designed, self-propelled, semi-submersible oil drilling platform. The vessel has a dynamic positioning capability to enable precision station keeping even in adverse sea states and weather conditions. The X-Band Radar (XBR) part of the SBX is the world's largest X-band radar built with leading edge technology. When fully integrated with the rest of the BMDS it will become the primary midcourse discrimination sensor for the system.

X-band technology provides this midcourse sensor with the ability to perform high resolution cued search, acquisition, tracking, and target discrimination to support the GMD element. To perform this effort, highly sophisticated algorithms are designed to enhance target acquisition and

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</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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discrimination of more complex threat sets and targets which are off-nominal in behavior. Material and electronic component enhancements to improve power output and sensitivity are also developed and integrated into the SBX operating software.

**FY08 Planned Program:**

- Complete XBR development.
- Incorporate advanced algorithms into the XBR software.
- Continue flight and ground test support (FTG-05, FTG-06, and GT-06-4).

**FY09 Planned Program:**

- Design enhanced power and power distribution system for the SBX vessel.
- Procure long-lead hardware required to enhance SBX power and power distribution.

	FY 2006	FY 2007	FY 2008	FY 2009
Ground Systems	29,308	107,470	170,130	194,170
RDT&E Articles (Quantity)	0	0	0	0

The GMD Ground Systems (GS) enable control and operation of the GMD Element as part of the BMDS. The Fire Control sub-component consists of the GMD Fire Control (GFC), Test Exerciser (TEx), and External Systems Interface (ESI). The communications sub-component consists of (1) GMD Communications Network (GCN) and (2) the In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT). Launch Systems products include Launch Site Components and Launch Support Systems. The launch systems subcomponent consists of launch site components (silos, SIVs) and Launch Support Systems (Command Launch Equipment (CLE) and Launch Support Equipment).

This GMD RDT&E Construction request is further justified in the accompanying DD-1391 Exhibits, RDT&E Construction Data.

**FY06 Accomplishments:**

- Procured initial set of launch site component hardware for new missile field with 14 silos at Fort Greely

**FY07 Planned Program:**

- Initiate planning and construction of a new missile field at Fort Greely with fourteen (14) silos and associated launch support equipment.

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</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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**FY08 Planned Program:**

- Continue flight and ground test support.
- Continue construction of a new missile field at Fort Greely with fourteen (14) silos and associated launch support equipment.

**FY09 Planned Program:**

- Continue flight and ground test support.
- Continue construction of a new missile field at Fort Greely with fourteen (14) silos and associated launch support equipment.
- Initiate Ground Systems Hardware Obsolescence Mitigation Program.

	FY 2006	FY 2007	FY 2008	FY 2009
Ground Based Interceptor	39,000	199,130	662,000	338,340
RDT&E Articles (Quantity)	0	0	4	6

The GBI development program funds the development of booster and EKV technologies. It also provides developmental assets for flight-testing. GMD has successfully demonstrated a hit-to-kill capability in five (5) separate flight tests. These internetworks will enhance the BMDS capability against long and intermediate range ballistic missile attacks through fielding of up to fourteen (14) operational missiles in Block 2008. Beginning in FY09, up to seven (7) GBIs will be removed from silos for refurbishment and replaced with recently acquired GBIs. Upon refurbishment, they will be emplaced in silos beginning in late FY10.

**FY06 Accomplishments:**

- Initiated acquisition of fourteen (14) GBIs (Fielding).

**FY07 Planned Program:**

- Continue acquisition of fourteen (14) GBIs (Fielding).

**FY08 Planned Program:**

RDT&E Test Articles: Complete acquisition of two (2) GBIs (Flight Test) and two (2) GBIs (Ground Test). Complete acquisition of two (2) GBIs (Flight Test) and two (2) GBIs (Ground Test).

- Complete acquisition of two (2) GBIs (Flight Test) and two (2) GBIs (Ground Test).
- Continue GBI ground testing, system level simulation, and Verification, Validation, and Accreditation activities.
- Support FTG-05 and FTG-06 Flight Tests.

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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 GBI Refurbishment Program

FY09 Planned Program:

RDT&E Test Articles: Complete acquisition of two (2) GBIs (Flight Test). Complete acquisition of four (4) GBIs (Fielding).

- Complete GBI emplacements through LDC-30.
- Complete acquisition of four (4) Block 2008 GBIs (Fielding) to Fort Greely.
- Complete acquisition of two (2) GBIs (Flight Test).
- Continue GBI ground testing, system level simulation, and Verification, Validation, and Accreditation activities.
- Initiate development of a Hardened two-stage OBV booster.
- Continue GBI Refurbishment program.

	FY 2006	FY 2007	FY 2008	FY 2009
Element Test and Evaluation	0	32,274	270,480	247,630
RDT&E Articles (Quantity)	0	0	2	2

GMD Test and Evaluation plans and executes GMD ground and flight tests to evaluate and verify GMD system performance and collect data to anchor models and simulations. Flight tests utilize a comprehensive infrastructure of ground-test facilities, ranges, sensors and instrumentation resources providing critical risk reduction and measurement of system performance for all GMD element components. This infrastructure allows the element engineers to successfully model and simulate test results into projections of future system performance. 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.

FY07 Planned Program:

- Initiate acquisition of two (2) targets.

FY08 Planned Program:

RDT&E Test Articles: Completed acquisition of two (2) targets.

Flight Test Objectives:

- FTG-05: Demonstrate BMDS functionality of the GBI engage on SBX Mod 1 Space Based Infrared System (SBIRS) for GBI launched from Vandenberg AFB to perform all functions through acquisition, discrimination, transition to terminal, and intercepting a long range/low elevation lethal object.

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<ul style="list-style-type: none"> <li>• FTG-06: Demonstrate BMDS functionality of the GBI engage on SBX Mod 1 (SBIRS) for GBI launched from Vandenberg AFB to perform all functions through acquisition, discrimination, transition to terminal, and intercepting medium closing velocity lethal object.</li> <li>• FTS-01: Demonstrate detection and acquisition of a boosting missile with acquisition sensor; demonstrate handover of boosting missile track from acquisition sensor to track sensor on same System Verification.</li> </ul> <p>Ground Test Objectives:</p> <ul style="list-style-type: none"> <li>• GTD-02: Assess BMDS ability to simultaneously execute multiple Block 06 Engagement Sequence Groups (ESG) using theater and strategic assets with Block 06 scenarios while using operational communications.</li> <li>• GTD-03: Assess BMDS ability to simultaneously execute multiple Block 06 Engagement Sequence Groups (ESG) using multiple raid sizes; assess Block 06 functionality and interoperability; demonstrate AN/TPY-2 functionality and interoperability with BMDS.</li> <li>• GTI-03: Assess BMDS ability to simultaneously execute multiple Block 06 ESGs using theater and strategic assets with Block 06 scenarios and Block 06 threats.</li> <li>• GT-06-3: Demonstrate the readiness of the GMD Block 06 final capability upgrades including the GFC build 6B for field integration and BMDS ground tests; demonstrate GMD capability to launch multiple interceptor types from a single launch site and/or multiple launch sites.</li> <li>• GT-06-4: Assess GMD's ability to simultaneously execute multiple Block 06 Engagement Sequence Groups (ESG) using theater and strategic assets with Block 06 scenarios while using operational communications; assess final GMD Block 06 functionality and interoperability with specific BMDS elements.</li> <li>• Coordinate and conduct GM Flight Tests FTG-05 and FTG-06.             <ul style="list-style-type: none"> <li>○ FTG-05 is a planned intercept mission demonstrating the GBI Engage On SBX for GBI launched from Vandenberg AFB and a target launched from Kodiak Launch Complex (KLC) on a long range low elevation westerly trajectory.</li> <li>○ FTG-06 is a planned intercept mission demonstrating the GBI Engage On SBX for GBI launched from Vandenberg AFB and a target launched from Kodiak Launch Complex (KLC).</li> </ul> </li> <li>• Support the tests in accordance with the MDA Integrated Master Test Plan (IMTP) and Master Integration Plan (MIP) to ensure ESG Integration into the BMDS.</li> <li>• Participate in BMDS Flight Test FTS-02 which is a system level BMDS test consisting of a target launch out of Vandenberg AFB exercising the space tracking and surveillance system (STSS). GMD will use this launch as a target of opportunity and exercise a simulated launch with an engage on SBX ESG.</li> <li>• Support 1 BMDS Ground Test Series (GTD-02/GTI-03) and 1 GTX test (GTX-03).             <ul style="list-style-type: none"> <li>○ GTD-02 is a BMDS distributed test which assesses BMDS ability to simultaneously execute multiple Block 06 ESGs using theater and strategic assets with Block 06 scenarios while using operational communications. It exercises functionality used in Block 06 ESGs with</li> </ul> </li> </ul>		

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<p>priority on THAAD engage on AN/TPY-2 and ESGs with AN/TPY-2 as surveillance/initial track sensor. GMD components are used to support this test (SBX, Fylingdales UK, Beale AFB, Cobra Dane).</p> <ul style="list-style-type: none"> <li>○ GTI-03 will assess BMDS, with GMD participation ability, to simultaneously execute multiple Block 06 (ESGs) using theater and strategic assets with Block 06 scenarios and Block 06 threats in a laboratory environment. Participants are: C2BMC, GMD, Aegis BMD, AN/TPY-2, Space Based Infrared System Management Control System (SBIRS MCS), Patriot, Joint Test Action Group (JTAG), JRE, Test Control System (TCS) and TCES.</li> <li>○ GTX-03 is a BMDS level test which will assess BMDS' ability to execute Block 06 ESGs using theater assets with Block 06 scenarios and Block 06 threats while integrating AN/TPY-2 track forwarding capability and Aegis BMDS Signal Processor (BSP) upgrade. GMD is a participant only.</li> <li>● Conduct Integrated Ground Test (IGT) GT-06-3 which is a laboratory test that demonstrates the readiness of the GMD Block 06 final capability upgrades including the GFC/C build 6B for field integration and BMDS ground tests. In addition, GT-06-3 will demonstrate GMD capability to launch multiple interceptor types from a single launch site and/or multiple launch sites. GMD will participate with laboratory Hardware-in-the-Loop/Software-in-the-Loop (HWIL/SWIL) components of the system and integrate in the laboratory with the remainder of the Ballistic Missile Defense System (BMDS) Element representations.</li> <li>● Conduct GT-06-4 (A, B) which are Distributed Ground Tests (DGT) that support BMDS Distributed Ground Test GTD-03 utilizing GFC/C build 6B software. GMD will participate with all deployed components of the system and integrate with the remainder of the BMDS via the GMD Fire Control/ Communication (GFC/C) to Command &amp; Control, Battle Management and Communication (C2BMC) interface. The GT-06-4 test event will complete the lab/field test cycle for the GMD Element test in support of BMDS Ground Test Campaign #3.</li> <li>● Perform pre- and post-test analyses of all ground and flight in the System Test Analysis and Reporting (STAR) Lab.</li> <li>● Perform analyses to define target requirements (STAR Lab).</li> <li>● Assess previous flight and ground test results from data analysis and incorporates into future test objectives.</li> <li>● Continue operation and maintenance of System Test Labs (PCIL -1 and -2, and ISTC-2).</li> <li>● Maintain upgrades of ISTC-2 Capability Enhancement-2. configuration to support GTIs and GTs (20 GBIs in each lab).</li> <li>● Conduct Pre-Mission Test (PMT) to support the Flight Tests (FTG-05 and FTG-06) and Post Flight Reconstruction (PFR) (ISTC-2).</li> <li>● Continue ground and flight test planning, design, and scheduling.</li> </ul>		

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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>	
<p>FY09 Planned Program:  RDT&amp;E Test Articles: Completed acquisition of 2 targets.  Flight Test Objectives:</p> <ul style="list-style-type: none"> <li>• FTG-07: Demonstrate BMDS functionality of the GBI engage on AN-TPY-2 Mod 1 ESG for GBI launched from Vandenberg, AFB to perform all functions through acquisition, discrimination, transition to terminal, and intercepting a medium/high closing velocity lethal object.</li> <li>• FTG-08: The objectives for FTG-08 are undefined. We are currently in the early stages of the initial planning for this mission. FTS-01: Demonstrate detection and acquisition of a boosting missile with acquisition sensor; demonstrate handover of boosting missile track from acquisition sensor to track sensor on same System Verification.</li> </ul> <p>Ground Test Objectives:</p> <ul style="list-style-type: none"> <li>• GTI-04: Assess BMDS ability to simultaneously execute multiple Block 06 ESGs using theater and strategic assets with Block 06 scenarios; assess BMDS initial Block 06 functionality and interoperability with THAAD, AN/TPY-2, C2BMC, GMD, Aegis, SBIRS, and PATRIOT; Exercise functionality used in applicable Block 06 ESGs with priority on: THAAD engage on AN/TPY-2, and ESGs with AN/TPY-2 as a sensor.</li> <li>• Coordinate and conduct GM Flight Tests FTG-07 and FTG-08. <ul style="list-style-type: none"> <li>○ FTG-07 is a planned intercept mission with a GBI launched from Vandenberg AFB utilizing an engage on AN-TPY-2 Mod 1 ESG and a target launched from Kodiak Launch Complex.</li> <li>○ FTG-08: GMD is currently in the early stages of the initial planning for this mission.</li> </ul> </li> <li>• Participate in BMDS Flight Test FTS-01 which is a system level BMDS test consisting of a target launch out of Reagan Test Site to exercise the Space Tracking and Surveillance System (STSS). GMD will use this launch as a target of opportunity and exercise a simulated launch with an engage on SBX ESG.</li> <li>• Support 1 BMDS Ground Test Series (1 GTI test and 1 GTD test) and 1 GTX test. (GMD does not have any element level ground tests planned for FY09. GMD will participate in three BMDS level ground tests: one integrated (GTI), one distributed (GTD) and one focused (GTX)).</li> <li>• Perform pre- and post-test analyses of all ground and flight in the System Test Analysis and Reporting (STAR) Lab.</li> <li>• Perform analyses to define target requirements (STAR Lab).</li> <li>• Conduct Pre-Mission Test (PMT) to support the Flight Tests (FTG-07 and FTG-08) and Post Flight Reconstruction (PFR) (ISTC-2).</li> <li>• Assess previous flight and ground test results from data analysis and incorporate into future test objectives.</li> <li>• Continue operation and maintenance of System Test Lab, PCIL -1 and -2, and ISTC-2.</li> <li>• Continue ground and flight test planning, design, and scheduling.</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				
<b>C. Other Program Funding Summary</b>									
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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<b><u>D. Acquisition Strategy</u></b> GMD will continue to follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks and spiral upgrades. The Department has structured the missile defense acquisition strategy to continually provide needed upgrades to the GMD system components within these two-years blocks, or as soon as practical. 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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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Element Engineering and Integration</b>										
Systems Engineering and Integration	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	0	0	1/2Q	136,588	1/2Q	153,637	1/2Q	290,225
<b>Sea-Based X-Band Radar</b>										
Sea-Based X-Band Radar	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/HI/MA/VA	0	0	N/A	41,459	4Q	27,340	1/2Q	68,799
<b>Ground Systems</b>										
Ground Systems	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/VA	29,308	107,470	4Q	155,094	1/2Q	177,426	1/2Q	469,298
<b>Ground Based Interceptor</b>										
Ground Based Interceptor (GBI)	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/UT/VA	39,000	199,130	1/2Q	657,674	1/2Q	336,696	1/2Q	1,232,500
<b>Element Test and Evaluation</b>										
Element Test and Evaluation	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/TX/VA	0	0	1/2Q	114,776	1/2Q	89,244	1/2Q	204,020
<b>Subtotal Product Development</b>			68,308	306,600		1,105,591		784,343		2,264,842

**Remarks**

The existing prime contract is completed at the end of first quarter FY09; funding amounts shown in the R-3 for the remaining three quarters of FY09 are estimates.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Program Management</b>										
SPT HSV	C/CPAF	CSC/AL	0	0	N/A	27,930	1/2Q	26,530	1/2Q	54,460
SPT HSV (SETAC)	C/CPAF	BAE/AL	0	0	N/A	1,425	1/2Q	1,354	1/2Q	2,779
	MIPR	MDA/AL/VA	0	0	N/A	11,400	1/2Q	10,830	1/2Q	22,230
	MIPR	Various/AL/VA	0	0	N/A	10,267	1/2Q	9,753	1/2Q	20,020
JNIC (GML)	SS/CPAF	JNIC/CO	0	0	N/A	5,690	1/2Q	5,861	1/2Q	11,551
JNIC (GML)	SS/CPAF	L3 Communications/CO	0	0	N/A	2,822	1/2Q	2,907	1/2Q	5,729
Information Technology	SS/CPFF	SAIC/AL	0	0	N/A	8,711	1/2Q	8,973	1/2Q	17,684
	SS/CPFF	BAE Systems/AL	0	0	N/A	2,060	1/2Q	2,122	1/2Q	4,182
	MIPR	AMCOM	0	0	N/A	618	1/2Q	637	1/2Q	1,255
	MIPR	SMDC/AL	0	0	N/A	515	1/2Q	532	1/2Q	1,047
	SS/CPAF	Boeing/AL/AK/AZ/CA/CO/TX/VA	0	0	N/A	147,766	1/2Q	175,194	1/2Q	322,960
Manufacturing	SS/CPAF	BAE Sytems/AL	0	0	N/A	2,822	1/2Q	2,484	1/2Q	5,306
	MIPR	AMRDEC/AL	0	0	N/A	466	1/2Q	410	1/2Q	876
	MIPR	SMDC/AL	0	0	N/A	0	4Q	0	4Q	
	SS/CPAF	TSI/AL	0	0	N/A	62	1/2Q	55	1/2Q	117
	C/CPAF	CSC/AL	0	0	N/A	0	4Q	0	4Q	
	C/CPAF	COLSA/AL	0	0	N/A	0	4Q	0	4Q	
Program Management	MIPR	MDA/AL, VA	0	0	N/A	41,520	1/2Q	42,150	1/2Q	83,670
Information Technology	MIPR	NSA/ Various	0	0	N/A	3,193	1/2Q	3,289	1/2Q	6,482

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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					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Element Engineering and Integration</b>										
	MIPR	AMCOM/AL	0	0	N/A	5,357	1/2Q	5,089	1/2Q	10,446
	C/CPAF	EG&G/VA	0	0	N/A	2,700	1/2Q	2,565	1/2Q	5,265
	FFRDC	Johns Hopkins/ MD	0	0	N/A	3,578	1/2Q	3,399	1/2Q	6,977
	FFRDC	MIT Lincoln Labs/MA	0	0	N/A	1,620	1/2Q	1,539	1/2Q	3,159
	FFRDC	MITRE/MA	0	0	N/A	3,240	1/2Q	3,078	1/2Q	6,318
	C/CPAF	TSI/AL	0	0	N/A	1,760	1/2Q	1,672	1/2Q	3,432
	MIPR	JNIC/CO	0	0	N/A	1,890	1/2Q	1,796	1/2Q	3,686
	MIPR	NSWC/VA	0	0	N/A	2,700	1/2Q	2,565	1/2Q	5,265
	MIPR	Sandia/NM	0	0	N/A	540	1/2Q	513	1/2Q	1,053
	C/CPAF	Various/ AL/NM/VA	0	0	N/A	400	1/2Q	380	1/2Q	780
SPT HSV	C/CPAF	CSC/AL	0	0	N/A	25,530	1/2Q	24,250	1/2Q	49,780
EE&I	C/CPAF	CSC/AL	0	0	N/A	130	1/2Q	123	1/2Q	253
	C/CPAF	BAE/AL	0	0	N/A	77	1/2Q	74	1/2Q	151
	C/CPAF	Aerospace/AL	0	0	N/A	270	1/2Q	256	1/2Q	526
	C/CPAF	IntelCorp/AL	0	0	N/A	630	1/2Q	598	1/2Q	1,228
	MIPR	SMDC STEPAL/ AL	0	0	N/A	720	1/2Q	684	1/2Q	1,404
	C/CPAF	CSC LTAP/ AL, VA	0	0	N/A	1,350	1/2Q	1,282	1/2Q	2,632
<b>Sea-Based X-Band Radar</b>										
	C/FP	BAE/AL	0	0	N/A	1,229	1/2Q	639	1/2Q	1,868
	MIPR	NAVFAC/HI	0	0	N/A	1,953	1/2Q	1,016	1/2Q	2,969
	MIPR	USCG/HI	0	0	N/A	39	1/2Q	20	1/2Q	59
	FFRDC	GA Tech/GA	0	0	N/A	30	1/2Q	15	1/2Q	45

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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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Ground Systems</b>										
	FFRDC	MITRE/AL	0	0	N/A	324	1/2Q	386	1/2Q	710
	C/FP	TSI/AL	0	0	N/A	2,277	1/2Q	2,710	1/2Q	4,987
	MIPR	Various/ AL/MD/VA	0	0	N/A	99	1/2Q	118	1/2Q	217
	C/CPFF	CSC/AL	0	0	N/A	4,639	1/2Q	5,520	1/2Q	10,159
	MIPR	USACE/AL	0	0	N/A	810	1/2Q	964	1/2Q	1,774
	MIPR	AMRDEC/ AL	0	0	N/A	540	1/2Q	643	1/2Q	1,183
	C/CPFF	L3 Communications/ AL	0	0	N/A	893	1/2Q	1,063	1/2Q	1,956
	C/CPFF	TSI/AL	0	0	N/A	664	1/2Q	790	1/2Q	1,454
Facilities Construction	MIPR	USACE/AK	0	0	N/A	0	1/2Q	0	1/2Q	
SPT HSV	C/CPAF	CSC/AL	0	0	N/A	4,790	1/2Q	4,550	1/2Q	9,340
<b>Ground Based Interceptor</b>										
	SS/FP	BAE Systems/ AL	0	0	N/A	3,019	1/2Q	1,147	1/2Q	4,166
	SS/FP	TSI/AL	0	0	N/A	740	1/2Q	281	1/2Q	1,021
	MIPR	AMCOM/AL	0	0	N/A	557	1/2Q	212	1/2Q	769
	MIPR	Various	0	0	N/A	10	1/2Q	4	1/2Q	14
Subtotal Support Costs			0	0		342,372		363,022		705,394

**Remarks**

The existing prime contract is completed at the end of the first quarter of FY09; funding amounts shown in the R-3 for the remaining three quarters of FY09 are estimates.

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

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Element Test and Evaluation</b>										
	MIPR	SMDC/AL	0	0	N/A	1,066	1/2Q	842	1/2Q	1,908
	MIPR	AMCOM/NM	0	0	N/A	868	1/2Q	685	1/2Q	1,553
	MIPR	NAVSEA/MD	0	0	N/A	836	1/2Q	661	1/2Q	1,497
	MIPR	DISA/AL	0	0	N/A	1,805	1/2Q	1,426	1/2Q	3,231
	MIPR	Aero Systems Center, Kirtland AFB/NM	0	0	N/A	1,642	1/2Q	1,297	1/2Q	2,939
	MIPR	US Army Space CMD, Peterson AFB/CO	0	0	N/A	2,448	1/2Q	1,934	4Q	4,382
	MIPR	VAFB/CA	0	0	N/A	6,299	1/2Q	4,976	1/2Q	11,275
	MIPR	RTTC/AL	0	0	N/A	575	1/2Q	454	1/2Q	1,029
	MIPR	PRST/HI	0	0	N/A	2,674	1/2Q	2,113	1/2Q	4,787
	C/CPFF	Gray/AL	0	0	N/A	1,023	1/2Q	808	1/2Q	1,831
	C/CPFF	SMC/CA	0	0	N/A	252	1/2Q	1,990	1/2Q	2,242
	C/CPFF	IEC/CA	0	0	N/A	605	1/2Q	478	1/2Q	1,083
	MIPR	Maritime Adm/ AL	0	0	N/A	1,066	1/2Q	842	1/2Q	1,908
	C/CPFF	Various/Various	0	0	N/A	218	1/2Q	172	1/2Q	390
	MIPR	NAWCWD/HI	0	0	N/A	1,008	1/2Q	796	1/2Q	1,804
<b>Targets</b>			0	32,274	N/A	103,061	1/2Q	110,790	1/2Q	246,125
SPT HSV	C/CPAF	CSC/AL	0	0	N/A	26,370	1/2Q	25,050	1/2Q	51,420
GMD T&E	MIPR	VAFB/CA	0	0	N/A	3,888	1/2Q	3,072	1/2Q	6,960
<b>Subtotal Test and Evaluation</b>			0	32,274		155,704		158,386		346,364
<b>Remarks</b>										

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</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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**IV. Management Services Cost ( \$ in Thousands )**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										

**Remarks**

Project Total Cost			68,308	338,874		1,603,667		1,305,751		3,316,600
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**Remarks**

The existing prime contract is completed at the end of the first quarter of FY09; funding amounts shown in the R-3 for the remaining three quarters of FY09 are estimates.

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>February 2007</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	2006				2007				2008				2009				2010				2011				2012				2013			
	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>																																
FT-1	▲																															
FTG-2			▲																													
FTG-3							Δ																									
FTG-4								Δ																								
FTG-5											Δ																					
FTG-6												Δ																				
FTG-7															Δ																	
FTG-X																Δ																
FTG-X (2)																			Δ													
FTG-X (3)																				Δ												
FTG-X (4)																							Δ									
FTG-X (5)																								Δ								
FTG-X (6)																											Δ					

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>February 2007</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	2006				2007				2008				2009				2010				2011				2012				2013			
	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>Integrated/Distributed Ground Tests</b>																																
GT 04-2.1 (phase 1) Runs for Record	▲																															
GT 04-2.2 Runs for Record			▲																													
GT 04-2.3 Runs for Record			▲																													
GT 04-2.4 Runs for Record				▲																												
GTD-01					△																											
GTX-2A						△																										
GT-04-3 (IGT-6)						△																										
GT-04-4A						△																										
GT-04-4B (DGT-3B)							△																									
GTI-02								△																								
GT-06-3 (IGT-7)									△																							
GT-06-4A (DGT)									△																							
GTD-02									△																							

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 February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>Flight Tests</b>								
FT-1	1Q							
FTG-2	4Q							
FTG-3		3Q						
FTG-4		4Q						
FTG-5			1Q					
FTG-6			3Q					
FTG-7				1Q				
FTG-X				3Q				
FTG-X (2)					1Q			
FTG-X (3)					3Q			
FTG-X (4)						1Q		
FTG-X (5)						3Q		
FTG-X (6)							1Q	
FTG-X (7)							3Q	
FTG-X (8)								1Q
FTG-X (9)								3Q
<b>Radar Certification Test</b>								
FT 04-1	2Q							
<b>BMDS Certification</b>								
FTX-02		2Q						
FTS-01			3Q					
FTX-X				2Q				
FTX-X (2)					2Q			
FTX-X (3)						2Q		
FTX-X (4)							2Q	
FTX-X (5)								2Q
<b>Integrated/Distributed Ground Tests</b>								
GT 04-2.1 (phase 1) Runs for Record	1Q							
GT 04-2.2 Runs for Record	3Q							
GT 04-2.3 Runs for Record	3Q							

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
GT 04-2.4 Runs for Record	4Q							
GTD-01		1Q						
GTX-2A		2Q						
GT-04-3 (IGT-6)		2Q						
GT-04-4A		2Q						
GT-04-4B (DGT-3B)		3Q						
GTI-02		4Q						
GT-06-3 (IGT-7)			1Q					
GT-06-4A (DGT)			1Q					
GTD-02			1Q					
GTX-3			2Q					
GTI-03			3Q					
GT-06-4B (DGT)			3Q					
GTD-03			4Q					
GTX-4				2Q				
GTI-4				3Q				
GTD-4				4Q				
IGT-X					1Q			
GTX-5					2Q			
GTI-5					2Q			
DGT-X					3Q			
GTD-5					4Q			
GTX-6						2Q		
GTI-6						3Q		
GTD-6						4Q		
IGT-X(2)							1Q	
GTX-7							2Q	
GTI-7							3Q	
DGT-X (2)							3Q	
GTD-7							4Q	
GTX-8								2Q

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
GTI-8								3Q
GTD-8								4Q
<b>Capability Enhancement GBIs</b>								
LDC Missiles 10-13	1Q-4Q							
LDC Missiles 14-18		1Q-2Q						
LDC Missiles 19-23		3Q-4Q						
LDC Missile 24			1Q					
LDC Missiles 25-44			2Q-4Q	1Q-4Q	1Q-4Q			
LDC Missiles 45-54						4Q	1Q-3Q	
<b>SBX</b>								
SBX Integration			2Q					

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0008 Ground-Based Midcourse Defense (GMD) Block 2010	0	62,900	206,012	560,800	1,636,905	1,335,487	69,300	78,970
RDT&E Articles Qty	0	0	0	0	8	14	6	2

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

Block 2010 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 2010 incorporates the next increment of fielded capability with up to ten (10) additional interceptors for either a European Site or expanded inventory at Fort Greely, AK.

Block 2010 planned additional enhancements for Third Site include:

- European GBI Missile Complex with ten (10) additional silos and ten (10) Silo Interface Vaults (SIVs) capable of supporting interceptors, Launch Support Equipment (LSE) racks that will interface with the existing Command Launch Equipment (CLE) assets and capabilities comparable to other operational silos.
- An IFICS Data Terminal (IDT) capable of sending in-flight target updates to and receiving in-flight status reports from interceptors launched from Third Site.
- GMD Communication Network (GCN) infrastructure connecting Third Site components to GMD Fire Control (GFC) Nodes located at Joint National Integration Center (JNIC) and Fort Greely, AK.
- Command Launch Equipment to launch Third Site GBIs.
- Third Site facilities including: Missile Monitoring Building, Missile Equipment Building (MEB), Missile Storage Igloo, IDT Building, Military Satellite Communications (MILSATCOM) facility and other facilities at the European GBI Missile Complex capable of providing appropriate protection of equipment.
- Replacement of obsolescent Ground Systems hardware to include the IBM Regatta GFC processors. A rehost of GFC software will be completed to maintain Block 10 functionality on the new hardware platform. Engagement Planning capabilities will be incorporated to improve mitigation of High Altitude Exoatmospheric Nuclear Survivability (HAENS) environments.
- 10 GBIs -- Orbital Boost Vehicle (OBV) 2-stage.

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</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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ESGs are demonstrated in the GMD Integrated Test Program. Capabilities of the BMDS will be enhanced as the number of operationally available ESGs increases. During Block 2010, GMD will demonstrate capability in four additional BMDS ESGs:

- Engage on UEWR (Clear, AK)
- Launch on UEWR (Clear, AK)
- Engage on FBX-T (Hercules Algorithm)
- Launch on FBX-T (Hercules Algorithm)

**B. Accomplishments/Planned Program**

	FY 2006	FY 2007	FY 2008	FY 2009
Ground Systems	0	32,700	163,312	498,400
RDT&E Articles (Quantity)	0	0	0	0

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

**FY07 Planned Program:**

- Conduct geo-technical site survey location studies for a third site missile field.
- Initiate planning and design for European Site silo complex.
- Conduct environmental, safety and health management analyses/documentation and compliance.
- RDT&E Construction request is further justified in the accompanying DD-1391 Exhibits, RDT&E Construction Data.
- Initiate site activation.

**FY08 Planned Program:**

- Complete planning and design for a European Site silo complex.
- Initiate acquisition of Ground Systems hardware (CLE, silos, SIVs, IDT and GCN).
- Continue site activation.
- Initiate construction of missile complex.
- Initiate acquisition of Protected Communication Control System (PCCS).
- Initiate acquisition of MILSATCOM equipment.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date <b>February 2007</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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- Initiate addition of Power Backup capability.

FY09 Planned Program:

- Initiate acquisition of IDT and Dual Antenna MILSATCOM.
- Initiate software upgrade to Ground System software to accommodate additional missile site.
- Continue acquisition of Ground Systems hardware (CLE, silos, SIVs, IDT and GCN).
- Continue site activation.
- Continue construction of silo complex.
- Continue acquisition of Protected Communication Control System (PCCS).
- Continue acquisition of MILSATCOM equipment.
- Continue acquisition of Power Backup capability.

	FY 2006	FY 2007	FY 2008	FY 2009
Ground Based Interceptor	0	30,200	42,700	62,400
RDT&E Articles (Quantity)	0	0	0	0

The Ground Based Interceptor consists of an Exoatmospheric Kill Vehicle and a Booster Vehicle. These interceptors will enhance the BMDS capability against long and intermediate range ballistic missile attacks by adding ten (10) fielded interceptors. The Block 2010 program will incorporate the integration of radiation hardening enhancements in a two-stage OBV booster which is based on and leverages the existing three-stage design.

FY07 Planned Program:

- Initiate acquisition and preliminary engineering of up to ten (10) two-stage GBIs (Third Site Fielding).

FY08 Planned Program:

- Continue acquisition of up to ten (10) two-stage GBIs (Third Site Fielding).

FY09 Planned Program:

- Continue acquisition of up to ten (10) two-stage GBIs (Third Site Fielding).
- Implement GBI Refurbishment program.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2007		
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>C. Other Program Funding Summary</b>									
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
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, spiral development, and evolutionary acquisition through the use of two-year capability blocks and spiral upgrades. The Department has structured the missile defense acquisition strategy to continually provide needed upgrades to the GMD system components within these two-years blocks, or as soon as practical. 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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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Ground Systems</b>										
Planning/Design/Site Activation	C/CPAF	Boeing/ AL/AK/AZ/CA/ CO/MA/VA/Eur ope Site	0	23,180	1/2Q	28,380	1/2Q	46,890	1/2Q	98,450
RDT&E Construction	C/CPAF	Boeing/ Europe Site	0	9,520	1/2Q	41,143	1/2Q	303,430	1/2Q	354,093
Missile Complex Hardware/Software	C/CPAF	Boeing/ AL/AK/AZ/CA/ CO/FL/MA/VA/ Europe Site	0	0	N/A	43,726	1/2Q	76,584	1/2Q	120,310
BMDS Communications Equipment (GM)	MIPR	DISA/ Europe Site	0	0	N/A	0	N/A	28,550	1/2Q	28,550
BMDS Communications Equipment (BC)	MIPR	DISA/ Europe Site	0	0	N/A	50,063	1/2Q	42,946	1/2Q	93,009
<b>Ground Based Interceptor</b>										
Ground Based Interceptor	SS/CPAF	Boeing/ AL/AK/AZ/CA/ CO/UT/VA	0	30,200	1/2Q	42,700	1/2Q	62,400	1/2Q	135,300
<b>Subtotal Product Development</b>			0	62,900		206,012		560,800		829,712

**Remarks**

The existing prime contract is completed at the end of first quarter FY09; funding amounts shown in the R-3 for the remaining three quarters of FY09 are estimates.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date <b>February 2007</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>					
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost			0	62,900		206,012		560,800		829,712
<b>Remarks</b>										





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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>February 2007</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	2006				2007				2008				2009				2010				2011				2012				2013			
	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>Integrated/Distributed Ground Tests</b>																																
GT 04-2.1 (phase 1) Runs for Record	▲																															
GT 04-2.2 Runs for Record			▲																													
GT 04-2.3 Runs for Record			▲																													
GT 04-2.4 Runs for Record				▲																												
GTD-01					△																											
GTX-2A						△																										
GT-04-3 (IGT-6)						△																										
GT-04-4A						△																										
GT-04-4B (DGT-3B)							△																									
GTI-02								△																								
GT-06-3 (IGT-7)									△																							
GT-06-4A (DGT)									△																							
GTD-02									△																							

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 February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>Flight Tests</b>								
FT-1	1Q							
FTG-2	4Q							
FTG-3		3Q						
FTG-4		4Q						
FTG-5			1Q					
FTG-6			3Q					
FTG-7				1Q				
FTG-X				3Q				
FTG-X (2)					1Q			
FTG-X (3)					3Q			
FTG-X (4)						1Q		
FTG-X (5)						3Q		
FTG-X (6)							1Q	
FTG-X (7)							3Q	
FTG-X (8)								1Q
FTG-X (9)								3Q
<b>Radar Certification Test</b>								
FT 04-1	2Q							
<b>BMDS Certification</b>								
FTX-02		2Q						
FTS-01			3Q					
FTX-X				2Q				
FTX-X (2)					2Q			
FTX-X (3)						2Q		
FTX-X (4)							2Q	
FTX-X (5)								2Q
<b>Integrated/Distributed Ground Tests</b>								
GT 04-2.1 (phase 1) Runs for Record	1Q							
GT 04-2.2 Runs for Record	3Q							
GT 04-2.3 Runs for Record	3Q							

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
GT 04-2.4 Runs for Record	4Q							
GTD-01		1Q						
GTX-2A		2Q						
GT-04-3 (IGT-6)		2Q						
GT-04-4A		2Q						
GT-04-4B (DGT-3B)		3Q						
GTI-02		4Q						
GT-06-3 (IGT-7)			1Q					
GT-06-4A (DGT)			1Q					
GTD-02			1Q					
GTX-3			2Q					
GTI-03			3Q					
GT-06-4B (DGT)			3Q					
GTD-03			4Q					
GTX-4				2Q				
GTI-4				3Q				
GTD-4				4Q				
IGT-X					1Q			
GTX-5					2Q			
GTI-5					2Q			
DGT-X					3Q			
GTD-5					4Q			
GTX-6						2Q		
GTI-6						3Q		
GTD-6						4Q		
IGT-X(2)							1Q	
GTX-7							2Q	
GTI-7							3Q	
DGT-X (2)							3Q	
GTD-7							4Q	
GTX-8								2Q

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
GTI-8								3Q
GTD-8								4Q
<b>Capability Enhancement GBIs</b>								
LDC Missiles 10-13	1Q-4Q							
LDC Missiles 14-18		1Q-2Q						
LDC Missiles 19-23		3Q-4Q						
LDC Missile 24			1Q					
LDC Missiles 25-44			2Q-4Q	1Q-4Q	1Q-4Q			
LDC Missiles 45-54						4Q	1Q-3Q	
<b>SBX</b>								
SBX Integration			2Q					

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2007</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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
R108 Ground-Based Midcourse Defense (GMD) Block 2012	0	0	0	0	0	0	1,060,665	1,078,606
RDT&E Articles Qty	0	0	0	0	0	0	6	4

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

Block 2012 supports the continued maintenance, testing, and integration of the multi-layered BMDS components that detect, track, intercept and defeat ballistic missile threats. It provides funding for flight and ground testing to include one (1) Integrated Ground Test (IGT) / Distributed Ground Test (DGT) to verify GMC capabilities and support decisions to deploy increased capabilities in the field; and four (4) GMD flight tests and two (2) BMDS level flight tests to demonstrate an increasing level of element capability to defeat realistic threat complexes. Block 2012 also provides funding for the sustainment and support of fielded capabilities.

**C. Other Program Funding Summary**

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</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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	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

**D. Acquisition Strategy**

GMD will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks and spiral upgrades. The Department has structured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The strategy has been to build and field an initial capability of the BMDS by Dec 2004, while continuing RDT&E work and spiral upgrades such that some number of GMD components will remain part of the BMDS Test Bed, even after being fielded as part of the initial capability. This process will (1) allow early implementation of a capability while supporting an evolving requirement/threat definition process, (2) minimize the risk of obsolescence posed by the rapid pace of technology development, (3) provide opportunities to update to a changing set of standards, and (4) allow informed trades between cost, schedule, and performance while exploring operational possibilities. The development approach has been enhanced to include (1) adding test infrastructure and improving test management to allow more operationally challenging representative flight tests and providing for increased testing against more challenging targets, and (2) increasing the fidelity of the project simulations.

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2007</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					<b>R-1 NOMENCLATURE</b> 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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Product Development										
<b>Remarks</b>										
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost										
<b>Remarks</b>										

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</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>							
COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0602 Program-Wide Support	45,833	49,122	46,196	45,143	46,978	28,315	23,117	25,427
RDT&E Articles Qty	0	0	0	0	0	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 such as strategic planning, program integration, business management, cost estimating, contracting, and financial management, to include preparation of financial statements, reimbursement of financial services provided by DFAS, internal review and audit, earned-value management, and program assessment. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Many of these costs reside within the Missile Defense Agency Executing Agents in the Services: Army Space and Missile Defense Command, Army PEO Space and Missile Defense, Office of Naval Research, and various Air Force laboratory and acquisition activities, although some functions and costs within this program element are performed by MDA employees assigned within the National Capital Region (NCR). Other costs included herein 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 fluctuation on a limited number of foreign contracts.

**B. Accomplishments/Planned Program**

	FY 2006	FY 2007	FY 2008	FY 2009
Civilian Salaries and Support	45,833	49,122	46,196	45,143
RDT&E Articles (Quantity)	0	0	0	0

See Section A: Mission Description and Budget Item Justification

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2007		
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>C. Other Program Funding Summary</b>									
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947