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Missile Defense Agency (MDA) Exhibit R-2 RDT&E Budget Item Justification					Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)			R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729
0701 Command and Control, Battle Management and Communications (C2BMC) Block 2004	92,457	154,001	22,536	16,200	0	0	0	0
0801 Command and Control, Battle Management and Communications (C2BMC) Block 2006	52,480	24,033	142,138	153,042	23,801	16,700	0	0
0901 Command and Control, Battle Management and Communications (C2BMC) Block 2008	687	10,798	75,900	100,000	197,026	166,031	65,745	56,075
0001 Command and Control, Battle Management and Communications (C2BMC) Block 2010	0	0	0	11,500	60,600	104,566	217,755	223,633
0702 Hercules Block 2004	4,575	0	0	0	0	0	0	0
0802 Hercules Block 2006	26,956	37,161	7,521	0	0	0	0	0
0902 Hercules Block 2008	22,532	46,095	52,096	48,755	23,881	13,319	0	0
0002 Hercules Block 2010	0	0	11,000	18,451	42,000	52,000	65,071	65,856
0703 Joint Warfighter Support Block 2004	32,748	24,178	0	0	0	0	0	0
0803 Joint Warfighter Support Block 2006	0	0	56,518	66,047	0	0	0	0
0903 Joint Warfighter Support Block 2008	0	0	0	0	61,571	62,774	0	0
0003 Joint Warfighter Support Block 2010	0	0	0	0	0	0	64,887	68,564
0204 Joint National Integration Center (JNIC)	53,830	71,367	76,895	80,688	82,661	84,736	85,925	86,581
0602 Program-Wide Support	23,684	16,197	10,548	15,299	17,621	16,473	16,634	15,020
Amount Included in PE 0904903D	0	0	0	0	-67,100	-64,600	-64,100	-52,900
Total PE Cost Reflected in R-1	309,949	383,830	455,152	509,982	442,061	451,999	451,917	462,829
<i>Note:</i> <i>Beginning in FY 2005, all funding transitioned from BMD System Core PE (0603890C - Project 0201) to the BMD Products PE (0603889C - Projects 0701, 0801, 0901 and 0001).</i>								
<b><u>A. Mission Description and Budget Item Justification</u></b> The mission of the Missile Defense Agency (MDA) is to develop an integrated layered Ballistic Missile Defense System (BMDS) to defend the United States, its deployed forces, friends, and allies from ballistic missiles of all ranges and in all phases of flight. Integrated layered BMDS provides defense in depth to the warfighter with global command and control of overlapping and complimentary sensors and weapon systems acting in concert with the unitary purpose of defending against all ranges of ballistic missile threats. The Ballistic Missile Defense Products program element funds specific system-level efforts that deliver integrated BMDS to the warfighter. This program element consists of four mission essential BMDS projects: Command and Control, Battle Management, and Communications (C2BMC), Hercules, and Joint Warfighter Support with efforts articulated across Blocks 2004, 2006, 2008, and 2010; and, the Joint National Integration Center.  C2BMC is the lynchpin of the BMDS, without which there is no integrated layered defense. While traditional ballistic missile defense development efforts produced individual elements highly capable of addressing specific threat sets, they were only loosely connected point-to-point in a systems-of-systems approach - i.e., they were part of a ballistic missile defense system but were not an								

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<p>integrated ballistic missile defense system. This loose federation of weapon systems, each with its own unique sensors, weapons, and fire control was unable to share information and data such that the optimum sensor-weapon system combination could simultaneously address individual or multiple range threats. The Ballistic Missile Defense Products C2BMC Program will deliver integrated layered defense by networking and unifying (common purpose) individual element components (sensors, weapon systems, fire control) with all military echelons across the globe. It will allow the President, SECDEF, and Combatant Commanders at strategic and tactical levels to systematically plan the fight (Planner), commonly see it unfold (Situation Awareness), dynamically direct/adjust (Battle Management) networked sensors and weapons systems (Network) to optimally engage (one shot - one kill) ballistic missile threats at any range, in any phase of flight, at any time. Although long desired by DoD, networking of sensors and weapons systems on this scale with world-wide military command and control echelons has never been done before.</p> <p>Prioritizing work on those elements and components identified by Engagement Sequence Group through MDA's systems engineering process, the Command and Control, Battle Management and Communications (C2BMC) Program delivers integrated, layered Ballistic Missile Defense (BMD) to the warfighters by developing and delivering products that provide: the warfighter the capability to conduct collaborative and dynamic, real-time BMD planning for layered defense among Combatant Commanders; common BMD situational awareness of the global battlespace at all BMD leadership levels, from Combatant Commanders to the Secretary of Defense and the President; sensor netting (i.e. combining and optimizing geographically distributed sensors and weapons) to maximize the capability to detect and track all ballistic missile threats; the warfighter the capability to coordinate BMD weapon-system engagements (i.e. manage the battle) real-time by selecting the best sensor-weapon combination to achieve the highest probability of kill; and, integrated BMD capabilities through global grid data and communication networks. By enabling integrated, layered BMD, the C2BMC Program provides the warfighter the capability to: rapidly identify and concurrently track multiple ballistic missile threats; dynamically adjust BMD system resources to maintain multiple ballistic missile threats in a BMD kill zone through all phases of flight; and concurrently engage multiple ballistic missile threats in any area of responsibility, in any phase of flight, at any time. The program sequentially builds upon ever increasing BMDS capability while also optimizing use of other emerging DoD communication and data networks. The BMDS' underlying success depends on planning for a defense design to optimize engagement sequences, ability to observe the battle as it unfolds, and ability to dynamically adjust available sensors and weapons to attain the highest probability of kill. Multiple assessments have confirmed C2BMC is the biggest challenge for an integrated BMDS. Funding reductions in this area will jeopardize MDA's ability to integrate multiple components being developed and fielded by multiple prime contractors into a single integrated system.</p> <p>Project Hercules contributes to the C2BMC Program and BMDS weapons and sensor components by providing and integrating advanced sensor netting and battle manager algorithms. This is a national effort to develop robust detection, tracking, and discrimination algorithms to counter off nominal and evolving missile threats. Hercules is also developing a physics-based Decision Architecture that applies advanced decision theory to future BMDS command, control, and battle management (C2BM) concepts. In addition to a general program to develop algorithms useful against targets in all phases of flight, Hercules has specific projects to develop algorithms for forward based sensors, the Decision Architecture, and mitigating countermeasures. Hercules develops algorithms to enhance BMDS element capabilities in Block 06, 08 and beyond and will provide these algorithms to the BMDS elements for insertion into their respective programs.</p> <p>The Joint Warfighting community (the Combatant Commands [COCOMS], and the Services) have a critical role in developing the BMDS. MDA must work collaboratively with this community. The Joint Warfighter Support Program (JWSP) is the vehicle to enable this collaborative interaction. The JWSP allows MDA to work with the Joint Warfighters to define applicable BMD capabilities, develop operational concepts, formulate logistical sustainment policies and procedures, and enable deployment of these capabilities by providing the means for the COCOMS to rehearse for and validate their BMD missions. The JWSP interacts with the BMDS user community via a series of exercises, war games, seminars, studies, and training/education modules.</p> <p>The Joint National Integration Center (JNIC) operates and maintains concurrent Research, Development, Test and Evaluation and warfighter operations centers for the C2BMC and Ground-based Midcourse Defense elements of the Ballistic Missile Defense System (BMDS). It provides mission critical system technical capabilities and subject matter expertise in a dedicated and adaptable environment that enables developers, testers, and operators to evolve, assess and quickly deliver the capabilities required to field a viable BMDS required for BMDS Engagement Sequence Group execution. As the field-operating activity for MDA in Colorado Springs, CO, the JNIC consists of a highly secure research and development building and a consolidated support facility totaling almost a million square feet. It provides MDA with worldwide secure communications connectivity throughout the missile defense community. The JNIC is the premier missile defense BMC3 integration and interoperability facility and a modeling and simulation center for wargaming and testing.</p> <p>Program-Wide Support provides funding for common support functions across the entire program such as strategic planning, program integration, cost estimating, contracting, 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 support contractors providing government staff augmentation in these areas. Applies to costs at the MDA HQ as well as its</p>		

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<b>Missile Defense Agency (MDA) Exhibit R-2 RDT&amp;E Budget Item Justification</b>		Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>
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. Other costs include physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses at the various MDA Executing Agent locations, which at the MDA HQ are generally funded from the Management Headquarters Program Element (0901598C). 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>B. Program Change Summary</b>	FY 2004	FY 2005
Previous President's Budget (FY 2005 PB)	305,309	418,608
Current President's Budget (FY 2006 PB)	309,949	383,830
Total Adjustments	4,640	-34,778
Congressional Specific Program Adjustments	0	-13,500
Congressional Undistributed Adjustments	0	-21,278
Reprogrammings	4,757	0
SBIR/STTR Transfer	-117	0
Adjustments to Budget Years	0	0
FY 2005 <ul style="list-style-type: none"> <li>• Congressional reductions and undistributed reductions</li> </ul>		
FY 2006/FY 2007 <ul style="list-style-type: none"> <li>• Added C2BMC Program content to address:             <ul style="list-style-type: none"> <li>• Asymmetric and non-traditional threats, through a globally integrated weapon system and sensor architecture.</li> <li>• Ability to defend Deployed Forces/Friends and Allies through an integrated BMDS incorporating additional sensors and weapons.</li> </ul> </li> <li>• A 15% reduction in new RF and EO/IR tracking, discrimination, and battle management algorithms, reducing BMDS boost, midcourse, and terminal layer robustness and slowing upgrades for handling several potential enemy countermeasures.</li> <li>• A 20% reduction in testing of algorithms, increasing BMDS component risk associated with inserting advanced tracking, discrimination, and battle management concepts.</li> <li>• A 12% reduction in performance improvement and technology integration studies, increasing the risk associated inserting advanced tracking, discrimination, and battle management technologies.</li> </ul>		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)			R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0701 Command and Control, Battle Management and Communications (C2BMC) Block 2004	92,457	154,001	22,536	16,200	0	0	0	0
RDT&E Articles Qty	11	7	0	0	0	0	0	0

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

In collaboration with the Missile Defense Agency's Systems Engineering and Integration defined architectures and system specifications, the Command and Control, Battle Management and Communications (C2BMC) Program provides the warfighter the capability of planning the Ballistic Missile Defense (BMD) fight while concurrently: tracking all potential ballistic missile threats; directing weapons to engage via a distributed network and paring any sensor with any weapon system to defeat ballistic missile threats at any range, in any phase of flight, in all theaters, and with coalition partners.

FY 2005 Congressional and undistributed funding reductions significantly impacted the following Block 2004 activities: a. Deferred to future block the development and delivery of essential situational awareness information on health and status of BMDS elements for warfighter decision-making process. Without this capability, warfighters must default to secure phone communications which adds cost and complexity to operations as well as workload to the operators; b. Deferred to future block the development and delivery of BMDS Network Management for global fault-management, configuration management, accounting, performance, and security (FCAPS). Fault management is the detection and correction of global network problems to keep the global network operational. Additionally, potential future problems are identified, and steps are taken to prevent them from occurring or recurring. Configuration management of the BMDS Network is controlling hardware and programming changes to include the addition of new equipment and programs, modification of existing systems, and removal of obsolete systems and programs. BMDS Network accounting is devoted to distributing resources optimally and fairly among network subscribers. This makes the most effective use of the systems available, minimizing the cost of operation. BMDS Network performance management involves managing the overall performance of the network: throughput is maximized, bottlenecks are avoided, and potential problems are identified. A major part of the effort is to identify which improvements will yield the greatest overall performance enhancement. BMDS Network security is the protection against hackers, unauthorized users, potential adversaries, and physical or electronic sabotage. The security systems also allow network administrators to control what each individual authorized user can (and cannot) do with the system; c. Deferred to future block the development of essential interface of the sea-based X-band radar (SBX) to the BMDS Network. Until the interface is designed, developed, and delivered, the SBX utility to the BMD mission is limited to a single element. The warfighter will not have the option to employ the SBX in any engagement sequences other than those involving GMD until this interface is delivered to the BMDS. This further delays the realization of a layered defense capability to our warfighters.

By the end of Block 2004, the C2BMC Program will deliver the rudimentary foundation for integrated, layered defense by delivering new and enhanced capabilities for BMD Planner, BMD Situational Awareness, Advanced Battle Manager, and the BMDS Network. Specifically, the C2BMC Program will: design and deliver initial displays that portray the BMD battlespace and provide initial Force level planning to the warfighter; develop and deliver a battle management prototype incorporating Forward Deployed X-Band (FBX-T) sensor management; and, deliver redundant communication paths to ensure a robust network. These capabilities will enable Engagement Sequence Groups (ESG) that involve the following BMDS elements and components: Ground Based Interceptor (GBI), Standard Missile 3 (SM-3), Cobra Dane Upgraded Early Warning Radar, SPY-1 Sensor, and Forward Based X-Band (FBX-T) Sensor. Additionally, C2BMC installation sites have been or will be activated and supported as a part of Block 2004 to enable the warfighter to perform BMD. As the number of activated sites and maturity of the C2BMC capability increases, the C2BMC Program continues concurrent development and operational integration and testing, as well as sustains fielded capabilities. Thus, Block 2004 includes infrastructure development, testing activity and operations and support to ensure accomplishment of all block objectives.

C2BMC ELEMENT

The C2BMC Element accomplishes block objectives by balancing the development of it's four principle product lines: Situational Awareness, Planner, Battle Management, and Network. This approach ensures that mature capabilities can be integrated and incrementally delivered to the warfighter. Two major and two minor incremental deliveries, or Spirals, are planned in each two-year Ballistic Missile Defense System (BMDS) Block. Each spiral represents an improvement in capability and functionality over the previous spiral. The delivery of these Spirals includes the software,

Project: 0701 Command and Control, Battle Management and Communications (C2BMC) Block 2004

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products
<p>hardware, and network connectivity needed to operate an integrated BMDS. The capability delivered in the Spirals enables BMDS ESGs by providing the proper interfaces, planning and coordination to allow the System elements and components to work together effectively.</p> <p>Situational Awareness and Planner products comprise the Command and Control (C2) portion of C2BMC. The Situational Awareness and Planner architecture is based on several design features emphasizing flexibility and interoperability. The architecture is designed to utilize an open system approach. This approach also provides an evolution path for technology upgrades. The Situational Awareness and Planner architecture is also designed to be scalable and utilizes a multi-vendor enterprise. The Planner aspect of C2 emphasizes planning for both theater and global missile defense through all planning phases: deliberate, crisis and execution. The planner will provide the capability to coordinate with all weapon system elements in an integrated, layered fashion. This type of coherent planning will result in BMD for the full range and complexity of ballistic missile threats. To ensure that the full C2BMC capability is realized by all weapon system elements, the architecture will migrate to a net-centric (vice point to point) planner to ensure both vertical and horizontal collaboration. Block 2004 development includes the following Situational Awareness and Planner capabilities: sensor management display (FBX-T Sensor) and Integrated Ballistic Missile Picture (IBMP), BMDS Summary Screen (SS), Executive Displays (displays all BMDS track and status data); provide basic force level planning capability; planning load robustness that protects against incomplete/inaccurate planning data; initial external XML interface with Air and Missile Defense Work Station (AMDWS) planner. Situational Awareness development also integrates current planning tools and development from the Defense Information Services Agency (DISA), Command and Control Information Control System (CCI2S), and various Joint Development Planners.</p> <p>Battle Management comprises the decisions and actions executed in direct response to the activities of enemy forces in support of the Joint Chiefs of Staff's concept of precision engagement. In Block 2004, the battle management portion of C2BMC develops and delivers FBX-T Sensor Management including Operational State Control, Sensor Tasking (cue), and Resource Management increasing the effectiveness of the radar system within the BMDS. Initial type interface with X-Band is also developed. In addition, track data management capability is improved to include forwarding of FBX-T tracks to Ground Based Missile Defense Fire Control (GFC), track filtering and Launch event association improving the battlespace depiction and targeting information for BMDS weapon systems. Initial development also starts on the Advanced Battle Manager</p> <p>The Network Communications portion of C2BMC ensures that communications and networking are not the limiting factor in fielding or operation of the BMDS. The intent is to develop and deliver products that provide robust connectivity to quickly and unambiguously share information across the global BMD and with external users. Effective networking will rely on an interconnection of a variety of platforms and capabilities. In Block 2004, network capability is delivered to enable AEGIS-GMD engagement sequence groups (ESG), Joint Range Extension for SATCOM interface, initial network monitoring and management, FBX-T initial deployment, Communications Network Equipment (CNE) auto-failover, network operations and security center and support of dual redundant suites. The C2BMC Program not only develops the network architecture but also fields and maintains communications lines procured through DISA, as well as fielding and maintaining joint range extension equipment to enable a global network grid.</p> <p>As the C2BMC products mature they are engineered and integrated into fielded Spirals. The C2BMC element uses spiral development (incremental development, test, and fielding) to produce the software required to provide a system-wide integrated BMD capability. Block 2004 matured products are integrated in Spirals 4.1 through 4.5 and delivered to the field for concurrent development testing and operational use in conjunction with the schedules and guidance of MDA's Responsible Test organization/Responsible Engineering Organization (REO/RTO). Spirals 4.1 and 4.2 provided infrastructure (including the development environment and initial message and track processing) and deliberate and dynamic planning (including planning tools and additional message processing and collaborative tools). Spiral 4.3 focuses on developing Initial Defensive Operations (IDO) capability, and is updated with spiral 4.4. Block 2004 is completed with the development and delivery of Spiral 4.5.</p> <p>Spirals 4.3 and 4.5 deliver specific capabilities, with successive spirals improving in capability and functionality. Spiral 4.3 emphasizes the command and control products of Situational Awareness and Planner. The capabilities delivered consist of 2D and 3D track displays, weapon and sensor engagement timeline, system health and status, GO/NO GO summary displays, executive displays, data synchronization and Distributed Multi-Echelon Training System (DMETS) Initial Training capability. In addition, Network functionality is provided in Communication Node Equipment (CNE), Joint Range Extension (JRE) and network management tools. Spiral 4.4 serves as an update to the previous spiral version, incorporating knowledge gained from BMDS Test Bed activity and user feedback. Spiral 4.5 deploys the complete Block 2004 capability, providing improved capability and functionality in all C2BMC product lines. Situational Awareness updates: the sensor management display to show all BMDS track and status information; IBMP, BMDS Summary Screen (SS), and Executive Displays adding FBX-T. Network communications capability is increased, adding CNE failover,</p>		

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<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603889C Ballistic Missile Defense Products</b>
<p>network and security center and initial sensor netting. Battle Management capability consists of FBX-T sensor state control and monitoring, sensor tasking for FBX-T, track forwarding of FBX-T data to GFC/GBI, and initial GMD ability to engage on network information.</p>		
<p><b>SITE ACTIVATION</b></p> <p>In addition to Block 2004 spiral software, fielding capability in FY 2005 for Block 2004 includes installation and activation of C2BMC dual suites at STRATCOM and NORTHCOM, one suite at PACOM, National Capital Region (NCR) Situational Awareness Capability, one workstation with 4 monitors and 2 C2BMC communications racks at the MDA Operations Center (MOC), Communications Connectivity from STRATCOM to Ft. Greely and additional communication links to FBX-T. The STRATCOM suites consist of 8 Enterprise Work Stations (EWS) with 4 monitors at each station, 2 C2BMC Server racks and 2 C2BMC communications racks. The NORTHCOM suites consist of 9 EWS with a total of 23 monitors, 2 C2BMC Server racks, 2 C2BMC Communications racks and 1 EWS and monitor at JNIC. The PACOM suite consists of 1 communications rack, 2 Joint Range Extension (JRE) Systems, 2 UHF antennas, 1 GPS antenna and 4 situational awareness web browsers. NCR situational awareness capability will consist of 2 web browsers and situational awareness video distribution equipment. The activation of these sites will result in improved reliability, availability and initial Concurrent Test and Operations (CTO) capability.</p>		
<p><b>INTEGRATION AND TEST</b></p> <p>The C2BMC Program developed and maintains a Test Bed at the Joint National Integration Center on Shriever AFB, CO for software integration and testing, system exercises, and operational support. The JNIC hosts three C2BMC Spiral integration and testing laboratories (BITC), and the C2BMC-Experimental Laboratory (C2BMC-X). Capabilities and functions located at the JNIC supporting the development of the BMDS C2BMC include: integration and test of C2BMC software Spirals; C2BMC experimentation supported by broad area announcements for independently developed software which may have application in the BMDS and C2BMC operations and maintenance, licenses and upgrades for the BITC and C2BMC-X laboratories. Additional software development laboratories are also maintained at the prime contractor's facilities in Huntsville AL and Colorado Springs CO.</p>		
<p><b>OPERATIONS AND SUPPORT</b></p> <p>C2BMC Program Operations and Support consists of On-Site Support, Help Desk activities, and hardware/software maintenance. On-Site Support provides assistance to the System Administrator, assigned by the site (e.g. Component Commands), with the general operational support of the C2BMC system, integration of the C2BMC support processes into the site's support regimen, and daily network operations and security support for the C2BMC system as part of a transition plan. Prime contractor personnel provide ``over-the-shoulder`` support to users when requested, or alternatively, contact the Help Desk. The Help Desk is located in Colorado Springs, CO. The help desk provides technical support to onsite personnel and to the C2BMC end-user, review of hardware/software problems and coordination of Commercial Off-the-Shelf (COTS) developer/vendor service calls, trouble ticket work-off, tracking and implementing documented escalation procedures, collecting of metrics and maintenance of the Help Desk website. This service will be delivered on a 24x7x365 basis. Maintenance of the C2BMC Element covers both software and hardware maintenance. The goal is to maintain the BMDS C2BMC at a pre-determined availability. Software maintenance support will be based on the use of Help Desk personnel who will field incoming trouble calls and request software engineering support as required. Scheduled (preventative and non-critical remedial) and unscheduled hardware maintenance issues will be managed by the prime contractor as appropriate.</p>		

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<b><u>B. Accomplishments/Planned Program</u></b>				
	FY 2004	FY 2005	FY 2006	FY 2007
C2BMC Element	51,771	102,951	6,600	0
RDT&E Articles (Quantity)	1	2	0	0
<p>The C2BMC Element accomplishes block 2004 objectives by balancing the development of four principle product lines -- Situational Awareness, Planner, Battle Management, and Network -- so that mature capabilities can be integrated and incrementally delivered to the warfighter via Spirals. Block 2004 includes infrastructure development, testing activity, as well as sustainment of fielded capabilities.</p> <p>FY 2004 Accomplishments:</p> <p>FY 2004 RDT&amp;E Articles: Spiral 4.3</p> <ul style="list-style-type: none"> <li>• Began Spiral 4.4 development</li> <li>• Began Spiral 4.5 development</li> <li>• Delivered Spiral 4.3 (RDT&amp;E Article) with the following capabilities: <ul style="list-style-type: none"> <li>• Situational Awareness <ul style="list-style-type: none"> <li>▪ 2D and 3D Track Display</li> <li>▪ Weapon/Sensor Engagement Timeline</li> <li>▪ Health and Status</li> <li>▪ Go Summary Display</li> <li>▪ Execute Display Data Synchronization</li> <li>▪ Distributed Multi-Echelon Training System (DMETS)</li> </ul> </li> <li>• Deliberative Planner Created <ul style="list-style-type: none"> <li>▪ Defense Design</li> <li>▪ Analyzed Defense Design</li> <li>▪ Merged Defense Design</li> </ul> </li> <li>• Network <ul style="list-style-type: none"> <li>▪ Communication Node Equipment (CNE)</li> <li>▪ Joint Range Extension Network Management Tools</li> </ul> </li> </ul> </li> </ul> <p>FY 2005 Planned Accomplishments:</p> <p>FY 2005 RDT&amp;E Articles: Spiral 4.4 &amp; Spiral 4.5</p> <ul style="list-style-type: none"> <li>• Complete Spiral 4.4 development</li> <li>• Complete Spiral 4.5 development</li> <li>• Deliver Spiral 4.4 (RDT&amp;E Article) which will provide high priority fixes to Spiral 4.3 based on warfighter feedback</li> </ul>				

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<ul style="list-style-type: none"> <li>• Deliver Spiral 4.5 (RDT&amp;E article) providing:                             <ul style="list-style-type: none"> <li>• Situational Awareness                                     <ul style="list-style-type: none"> <li>▪ FBX-T Sensor Management Display</li> <li>▪ IBX, SS, Executive Displays</li> <li>▪ Adds FBX-T</li> </ul> </li> <li>• Deliberative Planner                                     <ul style="list-style-type: none"> <li>▪ Improve User Interface</li> <li>▪ Performance Enhancements</li> </ul> </li> <li>• Battle Management                                     <ul style="list-style-type: none"> <li>▪ FBX-T Sensor Control/Monitor</li> <li>▪ Sensor Tasking for FBX-T</li> <li>▪ Track Forwarding FBX-T data to GFC/GBI</li> <li>▪ Initial GMD engage on net</li> </ul> </li> <li>• Network                                     <ul style="list-style-type: none"> <li>▪ CNE Auto Failover</li> <li>▪ Network Operations and Security Center</li> <li>▪ Initial Sensor Netting</li> </ul> </li> </ul> </li> </ul> <p>FY 2006 Planned Program:</p> <ul style="list-style-type: none"> <li>• Conduct Block 2004 Functional and Physical Configuration Audit</li> <li>• Identify system anomalies and, concurrently with the user, prepare System Modification Reports (SMR)</li> <li>• Design, Develop, and test fixes to resolve SMR's.</li> </ul>					
		FY 2004	FY 2005	FY 2006	FY 2007
C2BMC Site Activation		13,944	8,600	0	0
RDT&E Articles (Quantity)		10	5	0	0
<p>Site Activation efforts address fielding of the C2BMC Suites (both full and remote configuration), fielding supporting Communications Gateways, and fielding web browser based C2BMC nodes. This activity consists of two primary tasks. The first task includes planning for and installing C2BMC Components and completing required site surveys and Site Activation Plans and Site Installation Documents. The second task is to provide activation support, including equipment procurement, staging and inventory control.</p> <p>FY 2004 Accomplishments:</p> <p>FY 2004 RDT&amp;E Articles: 2 Full C2BMC Suites, 4 Remote Workstations, 1 Web Browser, 3 Gateways.</p> <ul style="list-style-type: none"> <li>• Installed full C2BMC Suite at STRATCOM (RDT&amp;E Article)</li> <li>• Installed full C2BMC Suite at JNIC (RDT&amp;E Article)</li> <li>• Installed Remote Workstation at NORTHCOM (RDT&amp;E Article)</li> </ul>					



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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>		
<ul style="list-style-type: none"> <li>• Installed Remote Workstation at the MOC (RDT&amp;E Article)</li> <li>• Installed Distributed Training Remote Workstation (RDT&amp;E Article)</li> <li>• Installed NCR Remote Workstation at National Military Command Center, SECDEF Executive Support Center, and White House Situation Room and Presidential Emergency Operations Center(RDT&amp;E Article)</li> <li>• Installed PACOM Web Browser (RDT&amp;E Article)</li> <li>• Installed Tech Ops Gateway (RDT&amp;E Article)</li> <li>• Installed Pacific Gateway to support GMD-Aegis engagement (RDT&amp;E Article)</li> <li>• Installed Ft. Greely Gateway (RDT&amp;E Article)</li> </ul> <p>FY 2005 Planned Accomplishments:</p> <p>FY 2005 RDT&amp;E Articles: 3 Full C2BMC Suites, 1 Gateway, 1 Web Browser</p> <ul style="list-style-type: none"> <li>• Install full STRATCOM Suite (RDT&amp;E Article)</li> <li>• Install full NORTHCOM Suite (RDT&amp;E Article)</li> <li>• Install full PACOM Suite (RDT&amp;E Article)</li> <li>• Install FBX-T Gateway (RDT&amp;E Article)</li> <li>• Install National Capital Region Browser (RDT&amp;E Article)</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
C2BMC Integration, Test Experimentation And Operation	17,000	25,530	0	0
RDT&E Articles (Quantity)	0	0	0	0
<p>The Joint National Integration Center (JNIC) is host to three C2BMC Spiral Integration &amp; Testing Laboratories (BITC), and the C2BMC-Experimental Laboratory (C2BMC-X). The following capabilities and functions located at the JNIC support the MDNTB(I)'s development of the BMDs C2BMC Element: Integrate and test of C2BMC software Spiraling deliveries from the Development Team to the Integration &amp; Test (I&amp;T) team; C2BMC experimentation supported by Broad Area Announcements for independently developed software which may have applications in the BMDs; Operational Support to the USNORTHCOM C2BMC Suite located at the JNIC; C2BMC Operations &amp; Maintenance, Licenses and Upgrades for the BITC and C2BMC-X laboratories.</p> <p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>• Spiral 4.2 and 4.3 element integration</li> <li>• Spiral 4.3 and 4.4 Cycle 3 testing</li> <li>• Developed the Test Environment and the C2BMC Test Article Simulation Environment</li> <li>• Initiated development of BMDs C2BMC Concept of Operations</li> <li>• Build-out of BITC-3 labs for Spiral 4.3</li> <li>• Ran full schedule of C2BMC-X events and Experimentation including support of:             <ul style="list-style-type: none"> <li>• Integrated Missile Defense (IMD) 03</li> <li>• Missile Defense Integration Exercises (MDIE)-04 A</li> <li>• Missile Defense Integration Exercises (MDIE)-04 B</li> </ul> </li> </ul>				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date <b>February 2005</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>R-1 NOMENCLATURE</b>		
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603889C Ballistic Missile Defense Products</b>		
<ul style="list-style-type: none"> <li>Pacific Explorer (PACEX) III</li> <li>Pacific Explorer (PACEX) IV</li> <li>Ground Test (GT)-185</li> <li>Integrated Ground Test (IGT)-4</li> <li>Integrated Missile Defense (IMD) 4.2</li> <li>Integrated Missile Defense (IMD) 4.4</li> </ul> <p>FY 2005 Planned Accomplishments:</p> <ul style="list-style-type: none"> <li>Spiral 4.4 and 4.5 Cycle 3 testing</li> <li>Upgrade Test Environment and the C2BMC Test Article Simulation Environment</li> <li>Continue development of C2BMC Concept of Operations</li> <li>Upgrade CNE for BITC Lab Spiral 4.3</li> <li>Continue full schedule of C2BMC-X Events and Experimentation</li> <li>Add new Communications and Connectivity, C4I Tools</li> <li>Run full schedule of C2BMC-X Events and Experimentation including support of:                             <ul style="list-style-type: none"> <li>Integrated Missile Defense War Games 04-2, 04-3 and 04-4</li> <li>EUCOM Exercise</li> <li>Integrated Ground Test 5 and 6</li> <li>Missile Defense Integration Exercise 05a</li> <li>Distributed Ground Test 1 and 2</li> </ul> </li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
Operations And Support	9,742	16,920	15,936	16,200
RDT&E Articles (Quantity)	0	0	0	0
<p>Operations and Support procedures are in place for all existing sites. Maintenance agreements were established, spares were procured and delivered to each site. At each location an agreement in the form of a site installation plan was drafted and approved to outline roles and responsibilities of all stakeholders. A follow-on engineering site implementation document was developed to lay out the details for activating the site.</p> <p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>Established Help Desk at JNIC</li> <li>Established on-site support teams at USSTRATCOM, USNORTHCOM (JNIC), USNORTHCOM (PAFB), USNORTHCOM (CMOC), USPACOM, NCR 1-3, and the MDA Operations Center (MOC)</li> <li>Trained 282 C2BMC Operators across all activated sites</li> <li>Developed and published an Integrated Logistics Support Plan (ILSP)</li> <li>Developed and published a Contractor Logistics Support Plan (CLSP)</li> </ul>				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>	
<p>FY 2005 Planned Accomplishments:</p> <ul style="list-style-type: none"><li>• Continue to maintain Help Desk at JNIC</li><li>• Establish on-site support team at PACOM</li><li>• Continue on-site C2BMC Support of Fielded Sites</li><li>• Continue C2BMC Operator training</li><li>• Update ILSP and CLSP as needed</li><li>• Initiate Planning and design of Network Operations and Security Center at STRATCOM</li></ul> <p>FY 2006 Planned Program:</p> <ul style="list-style-type: none"><li>• Continue to maintain Help Desk at JNIC for Block 2004 fielded capabilities</li><li>• Continue on-site C2BMC Support of Fielded Sites for Block 2004 fielded capabilities</li><li>• Continue C2BMC Operator training for Block 2004 fielded capabilities</li><li>• Update ILSP and CLSP as needed for block 2004 fielded capabilities</li><li>• Establish on-site support at additional COCOM site</li><li>• Complete Standup of Network Operations Security Center at STRATCOM</li></ul> <p>FY 2007 Planned Program:</p> <ul style="list-style-type: none"><li>• Establish logistics support concept for fielding C2BMC Mobile Capability</li><li>• C2BMC Deployed Mobile Capability Support</li><li>• Establish on-site support at additional COCOM site</li><li>• Continue to maintain Help Desk at JNIC</li><li>• Continue on-site C2BMC Support of Fielded Sites</li><li>• Continue C2BMC Operator training</li><li>• Update ILSP and CLSP as needed</li></ul>		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date <b>February 2005</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDTE&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>
<b><u>D. Acquisition Strategy</u></b>  The C2BMC acquisition strategy is consistent with the Missile Defense Agency's capability based acquisition strategy that emphasizes testing, spiral development, evolutionary acquisition, and knowledge based funding through the use of two-year capability blocks. The Missile Defense National Team C2BMC (Industry) (MDNTB(I)) led by Lockheed Martin Mission Systems is the C2BMC prime contractor via an Other Transactions Agreement. They are charged with the development, fielding and support of the C2BMC prototype and perform development and testing of C2BMC products in Arlington VA, Huntsville AL, and Colorado Springs CO. C2BMC element government, FFRDC/UARC, and SETA personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment.		

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
I. Product Development    Cost ( \$ in Thousands )										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
C2BMC Element										
C2BMC HW/SW Development, I&T	SS/CPAF	MDNTB/ Col. Springs, Co	5,799	24,327	1Q	2,244	1Q	0	N/A	32,370
C2BMC HW/SW Development, I&T	SS/CPAF	MDNTB/ Huntsville, AL	2,597	6,439	1Q	594	1Q	0	N/A	9,630
C2BMC Product Engineering & Development	SS/CPAF	MDNTB/ Washington, DC	7,190	40,782	1Q	3,762	1Q	0	N/A	51,734
EW/CEW; GCCS; JDP; JRE; ISC2; SBIRS-DSP; PATRIOT-JTAGS		Services, DISA, Agencies/ Various	22,680	20,143	1Q	0	N/A	0	N/A	42,823
Federally Funded Research Development Center	SS/CPAF	MITRE, IDA, ORNL, MIT/LL/ Washington, DC	6,774	5,750	1Q	0	N/A	0	N/A	12,524
Scientific Engineering and Technical Assistance	SS/CPFF	Sparta/CSC/ MDA HQ, Arlington, VA	6,731	5,510	1Q	0	N/A	0	N/A	12,241
C2BMC Site Activation										
Suites and Comms Gateways	SS/CPAF	MDNTB(I)/ Various COCOMS	13,944	8,600	1Q	0	N/A	0	N/A	22,544
C2BMC Integration, Test Experimentation And Operation										
Integration & Test	C/FFP	Northrop Grumman Mission Sys/ Colorado Springs, CO	17,000	17,500	1/2Q	0	N/A	0	N/A	34,500
Lab Development	SS/CPAF	MDNTB/ Washington, DC	0	8,030	1Q	0	N/A	0	N/A	8,030

Project: 0701 Command and Control, Battle Management and Communications (C2BMC) Block 2004

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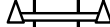







<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Operations And Support</b>										
CLS, Operations Support, COCOM Training	SS/CPAF	MDNTB(I)/ Various COCOMS	2,360	14,920	1Q	15,936	1Q	16,200	1/Q	49,416
Operation and Sustainment Support	MIPR	Various COCOMS	7,382	2,000		0	N/A	0	N/A	9,382
Subtotal Product Development			92,457	154,001		22,536		16,200		285,194
<b>Remarks</b>										
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 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 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										
<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 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>IV. Management Services Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost			92,457	154,001		22,536		16,200		285,194
<b>Remarks</b>										



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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																				Date February 2005												
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)															R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products																	
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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
C2BMC Element																																
Spiral 4.3 Development, Testing and Integration																																
Spiral 4.4 Development, Testing and Integration																																
Spiral 4.5 Development, Testing and Integration																																
Site Activation																																
JNIC - Full C2BMC Suite Installed																																
NORTHCOM - Full C2BMC Suite Installed																																
PACOM - Full C2BMC Suite Installed																																
STRATCOM - Full C2BMC Suite Installed																																

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
C2BMC Element								
Spiral 4.3 Development, Testing and Integration	1Q-4Q							
Spiral 4.4 Development, Testing and Integration	2Q-4Q	1Q-3Q						
Spiral 4.5 Development, Testing and Integration	2Q-4Q	1Q-4Q						
Block 2004 F/PCA			1Q					
Site Activation								
DECC Gateway Installed	3Q							
DMETS (Initial) - Remote Workstation Installed	4Q							
FBX-T Gateway Installed		4Q						
Ft. Greely Gateway Installed	4Q							
JNIC - Full C2BMC Suite Installed	4Q							
MOC - Remote Workstation Installed	3Q							
NCR - Remote Workstation Installed	4Q							
NCR - Web Browser Installed		3Q						
NORTHCOM - Full C2BMC Suite Installed		2Q						
NORTHCOM - Remote Workstation Installed	2Q							
PACOM - Full C2BMC Suite Installed		4Q						
PACOM - Web Browser Installed	3Q							
STRATCOM - Full C2BMC Suite Installed	2Q	3Q						
Tech Ops Gateway Installed	2Q							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)			R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0801 Command and Control, Battle Management and Communications (C2BMC) Block 2006	52,480	24,033	142,138	153,042	23,801	16,700	0	0
RDT&E Articles Qty	0	0	8	7	0	0	0	0

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

In collaboration with the Missile Defense Agency's Systems Engineering and Integration defined architectures and system specifications, the Command and Control, Battle Management and Communications (C2BMC) Program will provide the warfighter the capability to systematically plan the fight (Planner), see it unfold (Situation Awareness), and dynamically direct/adjust networked (Network) sensors and weapons (Battle Management) to engage and defeat ballistic missile threats at any range, in any phase, in all theaters. The C2BMC products will provide the warfighter the capability to optimize ballistic missile defense from a global level which can conflict with the planned defense and execution by an individual element. As such, the global optimization will occur for the greater good and defense of our Nation so that the defense from the perspective of a single element does not negatively impact on the defense of our Nation, our deployed forces, and our allies.

FY 2005 Congressional and undistributed funding reductions impacted Block 2006 development activities by delaying development of an Advanced Battle Manager capability by six (6) months and deferring JNIC lab upgrades needed for Block 2006 from FY 2005 to FY 2006.

In Block 2006, the C2BMC program will deliver to the warfighters the complete foundation for an integrated, layered defense. The BMD Planner will deliver the capability to design and implement a BMD layered defense. The BMD Situational Awareness will extend the monitoring of the BMD battlespace to the Combatant Commander's theaters and regions of activities. The Advanced Battle Manager will deliver the capability to develop dependable and trustworthy discriminated, correlated track data and distribute this track information to the BMDS elements and BMD Situational Awareness. The BMDS Network will deliver an expanded information transport capability, and add increased operational availability through redundant information transport solutions as well as the global network management capabilities to sustain network operations. These capabilities will enable Engagement Sequence Groups (ESG) that involve the following BMDS elements and components: Aegis, Terminal High Altitude Area Defense (THAAD), Sea Based X-Band Sensor (SBX) and Space Based Infrared Sensor (SBIR). In addition, C2BMC installation sites will be activated as a part of Block 2006 to increase the effectiveness the BMD warfighter. Also, high availability, redundant networks will be installed. These networks will be supported by Communications Nodal Equipment (CNE) suites designed for automated operation, management and monitoring which ensure the command and control nodes, sensors, and information flow to the weapon systems retain a capability despite large scale or subversive attack. Operations and support activities will continue in Block 2006 to ensure infrastructure availability and integrity. Block 2004 integration and testing activities are improved upon in Block 2006 with upgraded infrastructure (e.g., development lab hardware and software tools) and increased capability resulting from block development.

C2BMC ELEMENT

The C2BMC Element accomplishes block objectives by designing, developing, and delivering enhanced and new capabilities to the four product lines: BMD Planner, BMD Situational Awareness, Advanced Battle Manager, and the BMDS Network. Two major and two minor incremental deliveries, or Spirals, are planned in each two-year BMDS Block. Each major spiral, such as 6.2 or 6.4, represents an improvement in capability and functionality over the previous spiral. The delivery of these Spirals includes the software, and the hardware and network connectivity, needed to operate an integrated BMDS.

Situational Awareness and Planner products comprise the Command and Control portion of C2BMC. The Situational Awareness (SA) and Planner architecture is based on several design features emphasizing flexibility and interoperability. The architecture is designed to utilize an open system approach. This approach also provides an evolution path for technology upgrades. The Planner aspect of C2 emphasizes planning as you will fight. This includes planning for both theater and global missile defense through all planning phases: deliberate, crisis and execution. The planner will provide the Combatant Commands with the capability to build, analyze and coordinate global layered defense designs across all levels of command, from strategic to operational down to tactical weapon systems in a specific Combatant Command and across multiple Combatant Commands with all weapon system elements in an integrated, layered fashion. This type of coherent planning will result in BMD for the full range and complexity of ballistic missile threats. To ensure that the full C2BMC capability is realized by all weapon system elements, the architecture will migrate to a net-

Project: 0801 Command and Control, Battle Management and Communications (C2BMC) Block 2006

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2005
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products
<p>centric (vice point to point) planner to ensure both vertical and horizontal collaboration. The Situational Awareness aspect of C2 emphasizes a common, Single Integrated Ballistic Missile Picture from the President down to Operational Level of Command. It provides the decision makers at all levels of command the capability to direct weapon release authority for certain weapon platforms to engage, provides the health of the overall BMDS system and its ability to engage on multiple ranges of threats and take action across multiple mission areas (offensive and defensive). SA also provides the Distributed Multi-Echelon Training system to enable the Combatant Commands to conduct daily BMDS training at their specific location.</p> <p>Specific Block 2006 development includes the following Situational Awareness and Planner capabilities: executive summary screen enhancements which provide additional critical information and better organize and manage information for the President, SECDEF, and other senior civilian leadership; initial protection capability which provides the Combatant Commander with a real time assessment of the ability for the BMDS to engagement on multiple ranges of threats to protect homeland, regional, and theater areas based on the health of the individual sensors and weapons systems; integrated missile warning and missile defense displays which provide the Combatant Commanders the ability to correlate and take advantage of the additional data provided by the BMDS sensors so as to advise the President on critical strategic decisions once confirmed by certified systems; tactical planner interface enhancements which provide the ability for the operational level of command to quickly develop/coordinate tactical sensors and weapon systems placement and taskings; and, basic consequence management planning which provides the Combatant Commander with the capability to determine the consequences of a specific action to aid in decision making of a specific response; Distributed Multi-Echelon Training System (DMETS) which provides the warfighter the ability to conduct BMDS training daily at their Commands and across the Combatant Commands and National Capital Region to remain proficient in the ability to conduct all the necessary planning and execution actions to engage a ballistic missile. The DMETS also enables the Combatant Commands to conduct training across multiple mission areas (offensive/defensive). Battle Management comprises the decisions and actions executed in direct response to the activities of enemy forces in support of the Joint Chiefs of Staff's concept of precision engagement.</p> <p>The Battle Management (BM) product delivers a near-term product to support current BMD operations and a longer-term product to support future BMD operations. As it matures, the longer-term product, or Advanced Battle Manager (ABM) will assume BMDS battle management functions from the current BM. The C2BMC Program will deliver a globally distributed, real-time, ABM that exhibits highly predictable system behavior, fault -tolerant of runtime errors, and trustworthy battle-management operations. The ABM will receive sensor information from land, sea, and air sensors and commit land-, sea-, and air-based weapon systems to fire at identified targets. The ABM will offer the following benefits: (1) predictable battle management behavior for all possible inputs, (2) rapid insertion of new capabilities via component-based software engineering, (3) software that meets real-time deadlines in the BMD battlespace and (4) automated test oracles and test procedures that facilitate specification testing, software coding, element integration and fielding. By the end of Block 2006, the ABM will field the operational capability to discriminate both radar and space-sensor track data and associated features, correlate track information to the current BMD battlespace information, automatically redirect radar energy to a specific track of interest, and provide dependable ballistic missile track information to the BMDS elements and warfighter situational-awareness displays</p> <p>The Network Communications portion of C2BMC ensures that communications and networking are not the limiting factor in fielding or operation of the BMDS. The intent is to develop products that provide robust, high availability connectivity to quickly and unambiguously share information across the global BMDS consisting of multiple Sensors and, Weapon Systems and Command and Control nodes, as well as external users. Effective networking management and operations will rely on the ability to manage, coordinate and integrate a wide variety of platforms, interfaces and information standards and capabilities. In Block 2006 the Network aspect of C2BMC will: develop additional sensor interfaces and communication links, develop and deliver the ability to incorporate systems of disparate information standards and protocols, enhance data synchronization between decision makers, and improve automated failover to minimize the impact of failed equipment, and ensure continuing operations with a combat capability.</p> <p>As the C2BMC products mature they are engineered and integrated into fielded Spirals. The C2BMC element uses spiral development (incremental development, test, and fielding) to produce the software required to provide a system-wide integrated BMD capability. Block 2006 matured products are integrated in Spirals 6.1 through 6.4 and delivered to the field for concurrent development testing and operational use in conjunction with Responsible Test Organization (RTO) and Responsible Engineering Organization (REO) schedules and guidance.</p> <p>Spiral 6.1 serves as an update to Spiral 4.5, incorporating BMDS Test Bed experience and user feedback. Spiral 6.2 is the initial delivery of Block 2006 capability. This Spiral focuses on battle management enhancements such as improved sensor management (including Sea-Based X-Band (SBX) and Forward Based X-Band (FBX-T) sensors), track forwarding and launch on network capability allowing geographically distributed elements to participate in BMD effectively. Situational Awareness capability is also enhanced by improving executive summary screen display features and introducing initial Protection Capability (PROCAP) that allows operator evaluation of BMDS PROCAP based on individual element's Operations Capability (OPSCAP). Spiral 6.2 also improves the network functionality by introducing new interfaces with sensors in various geographic locations and improving the manual failover feature while refining and expanding the auto failover features,</p>		

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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>0603889C Ballistic Missile Defense Products</b>
<p>network management and operations, the ability to manage the entire network in real time, as well as continued expansion with tactical networks. Spiral 6.3 provides an update to Spiral 6.2, incorporating BMDS Test Bed experience and user feedback. Spiral 6.4 delivers complete Block 2006 capability. Situational Awareness and Planner are also improved upon with the following capabilities delivered as a part of Spiral 6.4: integration of missile warning and missile defense information allowing enhanced coordination, integrated offensive and defensive BMD planning and a tactical planner interface providing enhanced tactical planning coordination between the BDMS elements. Battle management capability delivered as a part of spiral 6.4 includes: advanced battle management capability including weapon system engagement control, improved sensor management and track forwarding, system level sensor track correlation and discrimination and engage on network capability. Finally, Network capability will continue to grow with an expansion of the tactical networks capabilities with newly developed MIL-STDS for information exchange, initial Network Centric Enterprise Service operations in concert with DISA's evolution of the Global Information Grid (GIG), automated COMSEC management and operations, and expansion of the strategic network to incorporate additional sensors and command and control nodes, each with high availability and redundancy.</p> <p><b>SITE ACTIVATION</b></p> <p>In addition to Block 2006 spiral software, fielding capability also includes installation and activation of CBMC Suites at CENTCOM, EUCOM and the National Capital Region (NCR) , as well as upgrades at STRATCOM, NORTHCOM and PACOM. The Suites consist of monitors, C2BMC Server racks and C2BMC communications racks. The activation of these sites will result in improved capability of the BMDS to meet global threats.</p> <p><b>INTEGRATION AND TEST</b></p> <p>The C2BMC Program developed and maintains a Test Bed at the Joint National Integration Center on Shriever AFB, CO for software integration and testing, system exercises, and operational support. The JNIC hosts three C2BMC Spiral integration and testing laboratories (BITC), and the C2BMC-Experimental Laboratory (C2BMC-X). Capabilities and functions located at the JNIC supporting the development of the BMDS C2BMC include: integration and test of C2BMC software Spirals; C2BMC experimentation supported by broad area announcements for independently developed software which may have application in the BMDS and C2BMC operations and maintenance, licenses and upgrades for the BITC and C2BMC-X laboratories. Additional software development laboratories are also maintained at the prime contractor's facilities in Huntsville AL and Colorado Springs CO.</p> <p><b>OPERATIONS AND SUPPORT</b></p> <p>C2BMC Program Operations and Support consists of On-Site Support, Help Desk activities, and hardware/software maintenance. On-Site Support provides assistance to the System Administrator, assigned by the site (e.g. Component Commands), with the general operational support of the C2BMC system, integration of the C2BMC support processes into the site's support regimen, and daily operational support for the C2BMC system as part of a transition plan. Prime contractor personnel provide ``over-the-shoulder`` support to users when requested, or alternatively, contact the Help Desk. The Help Desk is located in Colorado Springs, CO. The help desk provides technical support to onsite personnel and to the C2BMC end-user, review of hardware/software problems and coordination of Commercial Off-the-Shelf (COTS) developer/vendor service calls, trouble ticket work-off, tracking and implementing documented escalation procedures, collecting of metrics and maintenance of the Help Desk web site. This service will be delivered on a 24x7x365 basis. Maintenance of the C2BMC Element covers both software and hardware maintenance. The goal is to maintain the BMDS C2BMC at a pre-determined availability. Software maintenance support will be based on the use of Help Desk personnel who will field incoming trouble calls and request software engineering support as required. Scheduled (preventative and non-critical remedial) and unscheduled hardware maintenance issues will be managed by the prime contractor as appropriate.</p>		

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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>			<b>R-1 NOMENCLATURE</b> <b>0603889C Ballistic Missile Defense Products</b>	
<b><u>B. Accomplishments/Planned Program</u></b>				
	FY 2004	FY 2005	FY 2006	FY 2007
C2BMC Element	52,480	24,033	110,138	107,964
RDT&E Articles (Quantity)	0	0	2	2
<p>The C2BMC Element accomplishes block objectives by balancing the development of the four principle product lines (Situational Awareness, Planner, Battle Management, and Network) so that mature capabilities can be integrated and incrementally delivered to the warfighter. Peak development occurs in FY 2006 and FY 2007. Two major and two minor incremental deliveries, or Spirals, are planned in each two-year BMDS Block.</p> <p>FY 2004 Accomplishments:</p> <p>Defined initial C2BMC architecture and network</p> <ul style="list-style-type: none"> <li>• Began Spiral 6.1 and 6.2 definition</li> <li>• Conducted Block 2006 Ballistic Missile Defense System Support (BMDSS)</li> <li>• Conducted Block 2006 Executive Content Review (ECR)</li> </ul> <p>FY 2005 Planned Accomplishments:</p> <ul style="list-style-type: none"> <li>• Approve Spiral 6.1 and Spiral 6.2 Content Agreements</li> <li>• Begin Spiral 6.1 and 6.2 design and development</li> <li>• Begin Spiral 6.3 and 6.4 definition</li> </ul> <p>FY 2006 Planned Program:</p> <p>FY 2006 RDT&amp;E Articles: Spiral 6.1 &amp; Spiral 6.2</p> <ul style="list-style-type: none"> <li>• Approve Spiral 6.3 and Spiral 6.4 Content Agreements</li> <li>• Begin Spiral 6.3 and 6.4 design and development</li> <li>• Complete Spiral 6.1 Development</li> <li>• Conduct Spiral 6.2 Verification Readiness Review (VRR)</li> <li>• Complete Spiral 6.2 Development</li> <li>• Complete Spiral 6.3 Development</li> <li>• Deliver Spiral 6.1 (RDT&amp;E article) providing high priority updates to Spiral 4.5 (delivered in Block 2004)</li> <li>• Deliver Spiral 6.2 (RDT&amp;E article) with the following capabilities:             <ul style="list-style-type: none"> <li>• Battle Management                 <ul style="list-style-type: none"> <li>▪ Basic Sensor Registration</li> <li>▪ Improved FBX-T Management</li> <li>▪ Limited Cross-Net Correlation (includes FBX-T)</li> </ul> </li> </ul> </li> </ul>				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>February 2005</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>R-1 NOMENCLATURE</b>
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603889C Ballistic Missile Defense Products</b>
<ul style="list-style-type: none"> <li>▪ Forward Tracks from FBX-T to Aegis</li> <li>▪ Launch on Network</li> <li>▪ Advanced Battle Management Prototype</li> <li>• Situational Awareness <ul style="list-style-type: none"> <li>▪ Executive Summary Screen Enhancements</li> <li>▪ Initial Protection Capability (PROCAP) Processing and display</li> <li>▪ Full DMETS (Distributed Multi-Echelon Training System)</li> </ul> </li> <li>• Network <ul style="list-style-type: none"> <li>▪ Manual Failover</li> <li>▪ Enhanced Synchronized Data between COCOMs (includes OPSCAP)</li> </ul> </li> </ul> <p>FY 2007 Planned Program:</p> <p>FY 2007 RDT&amp;E Articles: Spiral 6.3 &amp; Spiral 6.4</p> <ul style="list-style-type: none"> <li>• Deliver Spiral 6.3 (RDT&amp;E Article) which will provide high priority updates to Spiral 6.2</li> <li>• Deliver Spiral 6.4 (RDT&amp;E Article) which will provide the following capabilities: <ul style="list-style-type: none"> <li>• Battle Management <ul style="list-style-type: none"> <li>▪ Task FBX-T for targeting and hit assessment</li> <li>▪ Cross-Net Correlation (Includes FBX-T and other elements)</li> <li>▪ Track Forwarding to all elements</li> <li>▪ Engage on Network</li> <li>▪ Advanced Battle Management Capabilities</li> </ul> </li> <li>• Situational Awareness <ul style="list-style-type: none"> <li>▪ Display Nuclear Detonation (NUDET) Information</li> <li>▪ Missile Warning and Missile Defense integration</li> <li>▪ Auto-Parse United States Message Text Format (USMTF) messages (facilitates ROE)</li> <li>▪ Correlate and Display Situational Awareness History</li> <li>▪ Initial Offensive / Defensive Integration</li> </ul> </li> <li>• Planning <ul style="list-style-type: none"> <li>▪ Tactical Planner Interface</li> <li>▪ Intelligence Data Integration</li> <li>▪ JC2 Interoperability</li> </ul> </li> <li>• Network <ul style="list-style-type: none"> <li>▪ Automated COMSEC Management</li> <li>▪ Expand Tactical Network capabilities</li> </ul> </li> </ul> </li> </ul>		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>	
	FY 2004	FY 2005	FY 2006	FY 2007
Site Activation	0	0	11,700	11,940
RDT&E Articles (Quantity)	0	0	6	5
<p>Block 2006 Site Activation efforts will continue to address the fielding and upgrade of all C2BMC associated Hardware and Software (Suites, Workstations, Communications Equipment).</p> <p>FY 2006 Planned Program:</p> <p>FY 2006 RDT&amp;E Articles: 3 Full C2BMC Suites, 3 Upgraded C2BMC Suites</p> <ul style="list-style-type: none"> <li>• C2BMC Full Suite Capability and Enterprise workstations at USCENTCOM (RDT&amp;E Article)</li> <li>• C2BMC Full Suite Capability and Enterprise workstations at EUCOM (RDT&amp;E Article)</li> <li>• C2BMC Full Suite Capability at an (COCOM) site (RDT&amp;E Article)</li> <li>• Upgrades suites at STRATCOM, PACOM and NORTHCOM (3 RDT&amp;E Articles)</li> </ul> <p>FY 2007 Planned Program:</p> <p>FY 2007 RDT&amp;E Articles: 2 Full C2BMC Suites, 3 Upgraded C2BMC Suites</p> <ul style="list-style-type: none"> <li>• C2BMC Full Suite Capability at two COCOM sites (RDT&amp;E Article)</li> <li>• Upgrade NORTHCOM Suite, Gateway, and Remote workstation (3 RDT&amp;E Articles)</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
Integration and Test	0	0	20,300	33,138
RDT&E Articles (Quantity)	0	0	0	0
<p>Block 2006 will see the Joint National Integration Center (JNIC) continue providing the capabilities and functions which support development of the BMDS C2BMC Element: Integrate and test of C2BMC software Spiral deliveries; C2BMC experimentation supported by Broad Area Announcements for independently developed software which may have applications in the BMDS; Operational Support to the USNORTHCOM C2BMC Suite located at the JNIC; C2BMC Operations &amp; Maintenance, Licenses; and, Upgrades for the BITC and C2BMC-X laboratories.</p> <p>FY 2006 Planned Program:</p> <ul style="list-style-type: none"> <li>• Run full schedule of C2BMC-X Events and Experimentation including support of:             <ul style="list-style-type: none"> <li>• Missile Defense Integration Exercises (MDIE) 05b, 06a, and 06b</li> <li>• Integrated Missile Defense War Games (IMD WG) 04-5, 04-6, 06-1, and 06b</li> <li>• Integrated Ground Test (IGT) 06-5 and 06-6</li> </ul> </li> </ul>				



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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
<ul style="list-style-type: none"><li><ul style="list-style-type: none"><li>Distributed Ground Test (DGT) 06-9</li><li>Spiral 6.1 and 6.2 Cycle 3 Testing</li></ul></li><li>Upgrade Test Environment and the C2BMC Test Article Simulation Environment</li><li>Continue C2BMC Concept of Operations</li><li>Upgrade CNE for BITC Lab Spiral 6.2</li><li>Continue full schedule of C2BMC-X Events and Experimentation</li><li>Enhance Communications and Connectivity, C4I Tools</li></ul> <p>FY 2007 Planned Program:</p> <ul style="list-style-type: none"><li>Run full schedule of C2BMC-X Events and Experimentation including support of:<ul style="list-style-type: none"><li>MDIE 07a, and 07b</li><li>IMD WG 06-3, and 06-4</li><li>IGT 06-7 and 06-8</li><li>DGT 06-10</li><li>Spiral 6.3 and 6.4 Cycle 3 Testing</li></ul></li><li>Upgrade Test Environment and the C2BMC Test Article Simulation Environment</li><li>Continue Operational Concept Team project</li><li>Upgrade CNE for BITC Lab Spiral 6.4</li><li>Continue full schedule of C2BMC-X Events and Experimentation</li><li>Add new Communications and Connectivity, C4I Tools</li></ul>									
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973

Project: 0801 Command and Control, Battle Management and Communications (C2BMC) Block 2006

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

D. Acquisition Strategy

The C2BMC acquisition strategy is consistent with the Missile Defense Agency's capability based acquisition strategy that emphasizes testing, spiral development, evolutionary acquisition, and knowledge-based funding through the use of two-year capability blocks. The Missile Defense National Team C2BMC (Industry) (MDNTB(I)) led by Lockheed Martin Mission Systems is the C2BMC prime contractor via an Other Transactions Agreement. They are charged with the development, fielding and support of the C2BMC prototype and perform development and testing of C2BMC products in Arlington VA, Huntsville AL, and Colorado Springs CO. C2BMC element government, FFRDC/UARC, and SETA personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
I. Product Development    Cost ( \$ in Thousands )										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
C2BMC Element										
C2BMC HW/SW Development/I&T	SS/CPAF	MDNTB/ Colorado Springs, CO	20,152	3,197	1Q	23,240	1Q	27,787	1Q	74,376
C2BMC HW/SW Development/I&T	SS/CPAF	MDNTB/ Huntsville, CO	14,200	933	1Q	18,232	1Q	17,187	1Q	50,552
C2BMC Product Engineering & Development	SS/CPAF	MDNTB/ Washington, DC	16,351	5,353	1Q	19,722	1Q	21,400	1Q	62,826
EW/CEW; GCCS; JDP; JRE; ISC2; ECPs	Various	Services, DISA, Agencies/ Various	0	3,290	1Q	22,964	1Q	28,110	1Q	54,364
Federally Funded Research Development Centers	SS/CPAF	MITRE, IDA, ORNL, MIT/LL/ Washington, DC	1,520	5,750	1Q	14,300	1Q	7,200	1Q	28,770
Scientific Engineering Technical Assistance	SS/CPFF	Sparta/CSC/ Arlington, VA	257	5,510	1Q	11,680	1Q	6,280	1Q	23,727
Site Activation										
Suites and Comms Gateways	SS/CPAF	MDNTB(I)/ Various COCOMS	0	0	N/A	11,700	1Q	11,940	1Q	23,640
Integration and Test										
Integration & Test Personnel	C/FFP	IDA,SRS Technologies/ Colorado Springs, CO	0	0	N/A	0	N/A	0	N/A	
Integration & Test	C/FFP	Northrop Grumman Mission Sys/ Colorado Springs, CO	0	0	N/A	20,300	1Q	17,300	1Q	37,600

Project: 0801 Command and Control, Battle Management and Communications (C2BMC) Block 2006

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Lab Development	SS/CPAF	MDNTB/ Washington DC	0	0	N/A	0	N/A	15,838	1Q	15,838
Subtotal Product Development			52,480	24,033		142,138		153,042		371,693
<b>Remarks</b>										
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 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 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										
<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 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>IV. Management Services Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost			52,480	24,033		142,138		153,042		371,693
<b>Remarks</b>										

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2005																
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)																	R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products																
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011				
	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	
C2BMC Element																																	
Spiral 6.1 Development, Testing and Integration					▲	▲			▲	▲	▲	▲																					
Spiral 6.2 Development, Testing and Integration					▲	▲			▲	▲	▲	▲	▲																				
Spiral 6.1 and 6.2 Content Agreement							☆																										
Spiral 6.3 Development, Testing and Integration							▲	▲	▲	▲	▲	▲	▲	▲																			
Spiral 6.3 and 6.4 Content Agreement											☆																						
Spiral 6.4 Development, Testing and Integration							▲	▲	▲	▲	▲	▲	▲	▲	▲																		
Site Activation																																	
USCENTCOM - Full C2BMC Suite and EWS Installed										Δ																							
Full C2BMC Suite Installed at COCOM												Δ				Δ																	
EUCOM - Full C2BMC Suite and EWS Installed												Δ																					

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
C2BMC Element								
Spiral 6.1 Development, Testing and Integration		1Q-4Q	1Q-2Q					
Spiral 6.2 Development, Testing and Integration		1Q-4Q	1Q-4Q					
Spiral 6.1 and 6.2 Content Agreement		3Q						
Spiral 6.2 VRR			1Q					
Spiral 6.3 Development, Testing and Integration		3Q-4Q	1Q-4Q	1Q-2Q				
Spiral 6.3 and 6.4 Content Agreement			3Q					
Spiral 6.4 Development, Testing and Integration		3Q-4Q	1Q-4Q	1Q-4Q				
Block 2006 System Requirement Review		1Q						
Block 2006 BMDSS	4Q							
Block 2006 ECR	4Q							
Block 2006 F/PCA					1Q			
Site Activation								
USCENTCOM - Full C2BMC Suite and EWS Installed			2Q					
Full C2BMC Suite Installed at COCOM			4Q	4Q				
EUCOM - Full C2BMC Suite and EWS Installed			4Q					
Upgrade STRATCOM, PACOM, and JNIC				3Q-4Q				
Upgrade Suites at STRATCOM, PACOM, and JNIC			3Q-4Q					

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603889C Ballistic Missile Defense Products</b>				
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0901 Command and Control, Battle Management and Communications (C2BMC) Block 2008	687	10,798	75,900	100,000	197,026	166,031	65,745	56,075
RDT&E Articles Qty	0	0	0	0	6	0	0	0

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

In collaboration with MDA Systems Engineering and Integration defined architectures and system specifications, the Command and Control, Battle Management and Communications (C2BMC) Program will provide the warfighter the capability to plan the Ballistic Missile Defense (BMD) fight while concurrently: tracking all potential ballistic missile threats, directing weapons to engage on a distributed network and paring any sensor with any shooter to defeat ballistic missile threats at any range, in any phase, in all theaters, with coalition partners.

The objective of the C2BMC Program in Block 2008 is to deliver a complete baseline capability for an integrated, layered defense. The C2BMC Program will increase the capabilities of the four C2BMC product lines (BMD Planner, BMD Situational Awareness, Advanced Battle Manager, and the BMDS Network) to accommodate the additions of new and enhanced sensors, new and enhanced weapon systems, and an increasing ballistic missile threat in terms of lethality, mobility, and numbers. Additionally in Block 2008, the C2BMC Program must add the capability to process asymmetric and non-traditional threats against our Nation, our deployed forces, and our allies. While FY 2008 and FY 2009 are peak years for Block 2008 development, FY 2006 and FY 2007 constitute significant precursory development to meet anticipated asymmetric and non-traditional threats. Work must be accomplished in these years to meet Block 2008 fielding timelines. The C2BMC Program accomplishes these efforts through a more refined Advanced Battle Management (ABM) system and sensor netting capability, as well as a greater level of planning and situational awareness sophistication. Specifically, the C2BMC element will: maintain system level weapons management and discrimination, provide advanced consequence management (ability to identify launch, kill, and impact results on population centers), provide fully integrated (ability to pass and use data from individually developed systems from Combatant Commanders down to tactical elements) planners, and provide a Global Reach BMDS. In addition, The C2BMC Element will integrate new sensors and an increasing number of weapons into the BMDS as part of defense against asymmetric and non-traditional threats. An expanded network centric (worldwide connectivity of separately developed sensors and weapon systems) capability, built upon Block 2006 groundwork, will extend the BMDS mission success by providing information management and quality of service to the individual user. In addition, C2BMC installation sites will be activated as a part of Block 2008 to increase the effectiveness the BMD warfighter and expand global C2BMC coverage. Operations and support activities will continue in Block 2008 for fielded and new C2BMC Sites to ensure infrastructure availability and integrity. FY 2006 integration and testing and concurrent operation activities continue in Block 2008 with improved infrastructure and increased capability resulting from block development.

**C2BMC ELEMENT**

In Block 2008, the C2BMC program will deliver to the warfighters a complete baseline for an integrated, layered defense. The BMD Planner will deliver the capability to design and implement a BMD layered defense to support multiple courses of action with different BMD architectures. The BMD Situational Awareness will extend the monitoring of the BMD battlespace to the homeland defense against asymmetric and non-traditional threats. The Advanced Battle Manager will deliver the capability to develop weapon-system/target pairing solutions and task weapon systems to engage on specific tracks. The BMDS Network will deliver an expanded information transport capability through the integration of the delivered GIG BE as well as the global network management capabilities to sustain network operations.

The C2BMC Element accomplishes block objectives by demonstrating and operationalizing advancements in four product lines -- Situational Awareness, Planner, Battle Management, and Network -- so that mature capabilities can be integrated and incrementally delivered to the warfighter. Two major and two minor incremental deliveries, or Spirals, are planned in each two-year BMDS Block. Each major spiral within Block 08 represents an improvement in capability and functionality over the previous spiral. The delivery of these Spirals includes the software, and the hardware and network connectivity, needed to operate an integrated BMDS that consists of a greater number of radars and tactical weapon systems. The hardware and software in Block 2008 will allow network sharing of target data to enable launch/engage on sensors that are not organic to the individual weapon system, but rather belong to the BMDS network as a system. The capability delivered in the



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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>February 2005</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>R-1 NOMENCLATURE</b>
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603889C Ballistic Missile Defense Products</b>
<p>Spirals enable BMDS Block 08 engagement sequences by delivering the key interfaces, integrating and refining the distributed system models for efficient and maintainable planning and coordinating the missile defense fight. This coordination allows the system elements and components to work together more effectively by extending the range and reach of the weapon systems.</p> <p>The Block 2008 C2BMC Situational Awareness and Planner product lines continue the development of flexible, interoperable and open system architecture. For Block 2008, Situational Awareness refines the Block 06 capabilities by adding decision-level aids for the Combatant Commanders, especially in dynamically replanning the fight once engaged, and improving display functionality in the areas of system health and status. Redundant capability, including both data and hardware, is also incorporated during Block 2008. The improved displays also enable enhanced battlespace coordination and deconfliction, and include advanced consequence management to support the asymmetric threat and large US region. The C2BMC Planner adds capability that fully integrates, for the first time, disparate BMD architectures and automates and consolidates BMD information databases, improving data synchronization and handling to facilitate the warfighter's decision making process. The Block 2008 Planner includes integrated air and missile defense planning information and incorporates element status on planner displays. A consolidated planner is also developed ensuring data from various elements is available immediately to the operator.</p> <p>During the Block 08 timeframe, there will be increased numbers Aegis BMD systems with SM-3, FBX-T radars, Patriot batteries, THAAD weapon systems, and a sea-based x-band (SBX) Radar. Due to the Block 08 complexity, the planner will be a critical tool for the Combatant Commander to develop layered defense plans during deliberative, crisis, and execution planning/dynamic (real-time) replanning. The planner will have the ability to access high fidelity simulations of sensor and weapon systems in a network centric approach to perform complex analysis of multiple Courses of Action (COA) for the placement and tasking of multiple sensors/weapons systems to engage multiple ranges of threats across multiple regions. The planner capability will enable the Combatant Commands to optimize the placement of sensors and weapons and shot doctrine to increase the overall probability of engagement success against multiple ranges of threats to protect the homeland, regional and theater areas of interest. The planner will have the capability to quickly develop new COAs or defense designs based on health status of current systems to allow for dynamic (real-time) retasking of sensor and weapon systems based on threat and defense region priorities. As part of the planner, data of current battle is collected to provide decision aides in assisting the operator in making adjustments of defense design, including placement of assets and tasking in real time, based on responding to off - nominal threats, enemy actions etc.</p> <p>In Block 2008, the Advanced Battle Manager (ABM) will build on the system-level track information work from Block 2006 and focus upon the weapon-system assignment capability that will pair identified ballistic missile threats to available BMD weapon systems by the end of the Block. For this work, the ABM will provide the capability to network radar and space sensors to provide fused track information that is based upon observed track features, and the capability to task all BMD radars to track assigned tracks to support the capabilities to launch-on and engage-on remote track information. The ABM will build weapon-system assignment capability that will be either fully automated with human override or provide assignment recommendations to a warfighter for his selection, as established in the BMD planning function. To accomplish weapon-system assignment, the ABM will incorporate the rules of engagement, shot doctrine, weapon-system authorities, prioritized defended asset list, weapon-system health and status, ballistic missile threat trajectory, range, altitude, other engagements, and inventory leveling to develop an optimized weapon-system assignment. Given the challenge of defending the battlespace for all ballistic missiles in all phases of flight at any range, the ABM includes development of weapon-system assignment software as real-time software to handle a large number of concurrent engagements. Development activities also include the incorporation of a mobile Experiments Lab (X-Lab), based on the JNIC X-Lab, into the global C2BMC architecture. This mobile capability can deploy to user sites for redundancy or exercises, as well as deploy to remote locations as needed.</p> <p>The C2BMC Network product features a more redundant network diverse path and increased communications support to the BMDS elements to include added sensors and weapons to the overall BMDS. With the introduction of Internet Protocol Version 6 (IPv6), the BMDS will be able to classify information by the particular user to ensure required quality of service, accountability, and classification is maintained on an integrated network. Capabilities such as real-time network management and monitoring will enable the warfighter to monitor the connection to BMDS weapons and anticipate and remedy any issues as they occur, vice having to wait for a human in the loop to report a problem up the change and push a correction back down.</p> <p>As the C2BMC products mature they are engineered and integrated into fielded Spirals. The C2BMC element uses spiral development (incremental development, test, and fielding) to produce the software required to provide a system-wide integrated BMD capability. Block 2008 matured products are integrated in Spirals 8.1 through 8.4 and delivered to the field for concurrent development testing and operational use in conjunction with Responsible Test Organization (RTO) and Responsible Engineering Organization (REO) schedules and guidance.</p> <p>Spiral 8.1, consists of upgrades and updates to the previous spiral 6.4. The content of spiral 8.1 will be based on BMDS Test Bed experience and user input. Spiral 8.2 will be delivered in the second half of FY 2008 and provide the BMDS with Battle Management weapon-target assignment and advanced discrimination algorithms. Spiral 8.2 will also include improvements to the Situational</p>		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date <b>February 2005</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>
<p>Awareness, Planner and Network areas of C2BMC. These improvements are contained in improved displays and display options, engagement sequencing and collaboration tools and increase network quality of service monitoring. Spiral 8.3 serves as an upgrade to Spiral 8.2 featuring the same concept of upgrading the previous spiral with knowledge gained from BMDS Test Bed activity and user feedback. Spiral 8.4 delivery in the second half of FY 2009 enables full Block 2008 capability. This spiral features improvements in engagement options and planning, further improved situational awareness displays, full implementation of the advanced battle manager, the introduction of a common planning database and deconfliction capability, and increased BMDS element network connectivity and support.</p> <p><b>SITE ACTIVATION</b></p> <p>Site Activation in this Block will be determined to best meet the needs of the BMDS. In FY 2006, development begins for a deployed mobile C2BMC capability providing mobile C2BMC suite capability for missile defense. This mobile capability, delivered in FY 2007, will improve ability to concurrently test and operate the BMDS by allowing the operational system to remain on-line during exercises. It also serves as a ready backup C2BMC capability for any threat contingency.</p> <p><b>INTEGRATION AND TEST</b></p> <p>The C2BMC Program developed and maintains a Test Bed at the Joint National Integration Center on Shriever AFB, CO for software integration and testing, system exercises, and operational support. The JNIC hosts three C2BMC Spiral integration and testing laboratories (BITC), and the C2BMC-Experimental Laboratory (C2BMC-X). Capabilities and functions located at the JNIC supporting the development of the BMDS C2BMC include: integration and test of C2BMC software Spirals; C2BMC experimentation supported by broad area announcements for independently developed software which may have application in the BMDS and C2BMC operations and maintenance, licenses and upgrades for the BITC and C2BMC-X laboratories. Additional software development laboratories are also maintained at the prime contractor's facilities in Huntsville AL and Colorado Springs CO.</p> <p><b>OPERATIONS AND SUPPORT</b></p> <p>C2BMC Program Operations and Support consists of On-Site Support, Help Desk activities, and hardware/software maintenance. On-Site Support provides assistance to the System Administrator, assigned by the site (e.g. Component Commands), with the general operational support of the C2BMC system, integration of the C2BMC support processes into the site's support regimen, and daily operational support for the C2BMC system as part of a transition plan. Prime contractor personnel provide ``over-the-shoulder`` support to users when requested, or alternatively, contact the Help Desk. The Help Desk is located in Colorado Springs, CO. The help desk provides technical support to onsite personnel and to the C2BMC end-user, review of hardware/software problems and coordination of Commercial Off-the-Shelf (COTS) developer/vendor service calls, trouble ticket work-off, tracking and implementing documented escalation procedures, collecting of metrics and maintenance of the Help Desk website. This service will be delivered on a 24x7x365 basis. Maintenance of the C2BMC Element covers both software and hardware maintenance. The goal is to maintain the BMDS C2BMC at a pre-determined availability. Software maintenance support will be based on the use of Help Desk personnel who will field incoming trouble calls and request software engineering support as required. Scheduled (preventative and non-critical remedial) and unscheduled hardware maintenance issues will be managed by the prime contractor as appropriate.</p>		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date <b>February 2005</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>			R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>	
<b>B. Accomplishments/Planned Program</b>				
	FY 2004	FY 2005	FY 2006	FY 2007
C2BMC Element	687	10,798	75,900	94,900
RDT&E Articles (Quantity)	0	0	0	0
<p>The goal remains to develop a globally distributed, real-time software intensive Battle Management system that exhibits highly predictable system-software behavior in which the system receives sensor information from land, sea, air, and space, and commits land, sea and air based weapons to fire at identified targets.</p> <p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>• Block 2008 Definition</li> </ul> <p>FY 2005 Planned Accomplishments:</p> <ul style="list-style-type: none"> <li>• Block 2008 Capabilities definition</li> <li>• Begin Block 2008 Spiral definition</li> <li>• Identify risk areas and risk reduction activity</li> <li>• Begin identification of interfaces to support defense of friends and allies</li> </ul> <p>FY 2006 Planned Program:</p> <ul style="list-style-type: none"> <li>• Begin development of Block 2008 Product line capabilities, including:             <ul style="list-style-type: none"> <li>• Situational Awareness                 <ul style="list-style-type: none"> <li>▪ Redundant capability, including both data and hardware</li> <li>▪ Improved displays and display options which also enable enhanced battlespace coordination and deconfliction</li> <li>▪ Advanced consequence management</li> </ul> </li> <li>• Planner                 <ul style="list-style-type: none"> <li>▪ Integrated air and missile defense planning information</li> <li>▪ element status on planner displays</li> <li>▪ consolidated planner ensuring data from various elements is available immediately to the operator</li> </ul> </li> <li>• Battle Manager                 <ul style="list-style-type: none"> <li>▪ Integrated composite depiction of weapon systems engagement envelopes for battle space analysis and coordination</li> <li>▪ Increase coordination and synchronization of the sensors and improved EW reporting to the operator</li> <li>▪ Weapon-target assignment and advanced discrimination logarithms</li> <li>▪ Refine real-time Battle Manager</li> </ul> </li> <li>• Network                 <ul style="list-style-type: none"> <li>▪ Develop strategies to migrate to IPV 6 with no impact to operational capability</li> <li>▪ Define and develop requirements by user for quality of service, classification, and accountability of information</li> <li>▪ Design and develop architecture to support new Command and Control nodes, sensors, and weapon systems</li> </ul> </li> </ul> </li> <li>• Begin Block 2008 risk reduction</li> </ul>				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>February 2005</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>R-1 NOMENCLATURE</b>		
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603889C Ballistic Missile Defense Products</b>		
<ul style="list-style-type: none"> <li>Begin to identify advanced technology to enable fielding of future C2BMC capability</li> <li>Define C2BMC Mobile Capability concept, equipment and architecture</li> <li>Design C2BMC Mobile Capability to be consistent with JNIC capability</li> <li>Develop C2BMC Mobile Capability, including support of concurrent test and operations out to CNIP deployments</li> </ul> <p>FY 2007 Planned Program:</p> <ul style="list-style-type: none"> <li>Approve Spiral 8.1 and Spiral 8.2 Content Agreement</li> <li>Begin Spiral 8.1 and Spiral 8.2 design and development</li> <li>Begin Spiral 8.3 and Spiral 8.4 definition</li> <li>Continued development of product line capabilities, including Situational Awareness, Planner, Battle Manager and Network</li> <li>Continue risk reduction activity</li> <li>Continue to identify and pursue advanced technology to enable fielding of future C2BMC capability</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
Integration and Test	0	0	0	1,200
RDT&E Articles (Quantity)	0	0	0	0
<p>FY 2007 Planned Program</p> <ul style="list-style-type: none"> <li>JNIC Missile Defense Space Tool Upgrade</li> <li>Development of Early Warning Models</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
Site Activation	0	0	0	3,900
RDT&E Articles (Quantity)	0	0	0	0
<p>The C2BMC Mobile Capability provides remote C2BMC functions to include Planning displays and deployable communications support options for exercises, quick reaction tests and experimentation.</p> <p>FY 2007 Planned Program</p> <ul style="list-style-type: none"> <li>Deliver C2BMC Mobile Capability including Operator Van, Vehicle mounted computer equipment and CNE and a transportable, vehicle mounted tactical SATCOM terminal that is MILSTAR compatible.</li> </ul>				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

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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>0603889C Ballistic Missile Defense Products</b>
<p><b><u>D. Acquisition Strategy</u></b></p> <p>The C2BMC acquisition strategy is consistent with the Missile Defense Agency's capability based acquisition strategy that emphasizes testing, spiral development, evolutionary acquisition and knowledge-based funding through the use of two-year capability blocks. The Missile Defense National Team C2BMC (Industry) (MDNTB (I)) led by Lockheed Martin Mission Systems is the prime contractor via an Other Transactions Agreement. They are charged with the development, fielding, and support of the C2BMC prototype. The MDNTB(I) performs development and testing of C2BMC products in Arlington VA, Huntsville AL, and Colorado Springs, CO. C2BMC element government, FFRDC/UARC, and SETA personnel are also fully integrated as part of the MDNTB to function in an Integrated Product Team Environment Element for the BMD System. The MDNTB is composed of Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), System Engineering and Technical Assistance (SETA), and industry contractors. An Other Transactions Agreement was awarded to Lockheed Martin Mission Systems as the prime contractor for the industry team (MDNTB (I)).</p>		

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
I. Product Development    Cost ( \$ in Thousands )										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
C2BMC Element										
C2BMC HW/SW Development/I&T	SS/CPAF	MDNTB/ Colorado Springs, CO	0	3,399	1Q	20,731	1Q	38,600	1Q	62,730
C2BMC HW/SW Development/I&T	SS/CPAF	MDNTB/ Hunstville, AL	0	900	1Q	20,250	1Q	17,942	1Q	39,092
C2BMC Product Engineering & Development	SS/CPAF	MDNTB/ Washington, DC	0	5,699	1Q	31,272	1Q	21,408	1Q	58,379
EW/CEW; GCCS; JDP; JRE; ISC2; ECPs	Various	Services, DISA, Agencies/ Various	0	800	1Q	3,647	1Q	3,900	1Q	8,347
Federally Funded Research Development Centers	SS/CPAF	MITRE, IDA, ORNL, MIT/LL/ Washington, DC	687	0	N/A	0	N/A	7,250	1Q	7,937
Scientific Engineering and Technical Assistance	SS/CPFF	Sparta/CSC/ Arlington, VA	0	0	N/A	0	N/A	5,800	1Q	5,800
Integration and Test										
Integration & Test	C/FFP	Northrup Grumman Mission Sys/ Colorado Springs, CO	0	0	N/A	0	N/A	1,200	1Q	1,200
Site Activation										
Suites and Comms Gateways	SS/CPAF	MDNTB/ Various COCOMS	0	0	N/A	0	N/A	3,900	1Q	3,900
Subtotal Product Development			687	10,798		75,900		100,000		187,385
Remarks										

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>					
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 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 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 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 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost			687	10,798		75,900		100,000		187,385
<b>Remarks</b>										



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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																								Date February 2005								
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)												R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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				
C2BMC Element																																
Spiral 8.1 Development, Testing & Integration														△				△														
Spiral 8.2 Development, Testing & Integration														△						△												
Spiral 8.1 and 8.2 Content Agreement															☆																	
Spiral 8.3 Development, Testing & Integration															△						△											
Spiral 8.4 Development, Testing & Integration															△								△									
Spiral 8.3 and 8.4 Content Agreement																	☆															
Site Activation																																
Full C2BMC Suite Installed - COCOM Site																			△				△									

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
C2BMC Element								
Spiral 8.1 Development, Testing & Integration				1Q-4Q	1Q-2Q			
Spiral 8.2 Development, Testing & Integration				1Q-4Q	1Q-4Q			
Spiral 8.1 and 8.2 Content Agreement				3Q				
Spiral 8.2 VRR					1Q			
Spiral 8.3 Development, Testing & Integration				3Q-4Q	1Q-4Q	1Q-2Q		
Spiral 8.4 Development, Testing & Integration				3Q-4Q	1Q-4Q	1Q-4Q		
Spiral 8.3 and 8.4 Content Agreement					3Q			
Block 2008 BMDSS			4Q					
Block 2008 ECR			4Q					
Block 2008 SRR				1Q				
Block 2008 F/PCA					1Q			
Site Activation								
Full C2BMC Suite Installed - COCOM Site					4Q	4Q		
Upgrade Three C2BMC Sites					3Q-4Q	3Q-4Q		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>			
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>			
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0001 Command and Control, Battle Management and Communications (C2BMC) Block 2010	0	0	0	11,500	60,600	104,566	217,755	223,633
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

In collaboration with MDA Systems Engineering and Integration defined architecture and system specifications, the Command and Control, Battle Management and Communications (C2BMC) Element will provide the warfighter the capability to plan the Ballistic Missile Defense (BMD) fight while concurrently: tracking all potential ballistic missile threats, directing weapons to engage on a distributed network and paring any sensor with any shooter to defeat ballistic missile threats at any range, in any phase of flight, in all theaters, with coalition partners.

The objective of Block 2010 is to continue maturing and expanding BMD System level C2BMC. This is accomplished through balanced development of the four C2BMC product lines: Battle Management, Situational Awareness, Planner, and Network. Development will include real time battle management that fully utilizes the growing network of BMDS sensors and weapons. Concurrently, network capabilities will continue to expand and be integrated with evolving DOD global grid capabilities

**C2BMC ELEMENT**

The C2BMC Element accomplishes block objectives by balancing the development of the four product lines -- Situational Awareness, Planner, Battle Management, and Network -- so that mature capabilities can be integrated and incrementally delivered to the warfighter. Two major and two minor incremental deliveries, or Spirals, are planned in each two-year BMDS Block. Each spiral represents an improvement in capability and functionality over the previous spiral. The delivery of these Spirals includes software, and the hardware and network connectivity, needed to operate an integrated BMDS. The capability delivered in the Spirals enables BMDS ESGs by providing the proper interfaces, planning and coordination to allow the system elements and components to work together effectively.

Situational Awareness, Planner, Battle Manager and Network will all be enhanced to include additional BMDS sensors and weapons. The C2BMC Battle Manager evolves to a mature real time battle management system fully utilizing the growing network of BMDS sensors and weapons, including direct feed of space based detections and tracking to improve the timeliness of weapon delivery. The Planning function is also improved, supporting operators in rapid battle plan adjustments. Block 2010 Network capabilities continue to expand and are integrated with evolving DOD global grid capabilities. Capability to defend against an asymmetric threat is expanded from Block 2008 through greater coordination with newly established command and control sites and sensor installations. C2BMC Sites are activated to incorporate additional sensors and weapons targeting the asymmetric threat. The specific capabilities delivered in Block 2010 will become more defined as the BMDS mission in Block 2010 becomes more resolved.

As C2BMC products mature they are engineered and integrated in to fielded Spirals. The C2BMC element uses spiral development (incremental development, test, and fielding) to produce the software required to provide a system-wide integrated BMD capability. Block 2010 matured products are integrated in Spirals 10.1 through 10.4 and delivered to the field for concurrent development testing and operational use in conjunction with Responsible Test Organization and Responsible Engineering Organization schedules and guidelines.

Spiral 10.1 updates Spiral 8.4 based on Test Bed experience and user feedback. Spirals 10.2 and 10.4 will incorporate the mature capabilities from the C2BMC product lines. Spiral 10.3 is an update to Spiral 10.2 based on testbed experience and user feedback.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>	
<p><b>SITE ACTIVATION</b></p> <p>In addition to Block 2010 spiral software, fielding capability also includes installation and activation of C2BMC Suites at COCOM sites, as well as upgrades at previously activated sites. The suites consist of monitors, C2BMC server racks and C2BMC communications racks. The activation of these sites will result in improved BMDS capability to meet global threats.</p> <p><b>INTEGRATION AND TEST</b></p> <p>The C2BMC Program developed and maintains a Test Bed at the Joint National Integration Center on Shriever AFB, CO for software integration and testing, system exercises, and operational support. The JNIC hosts three C2BMC Spiral integration and testing laboratories (BITC), and the C2BMC-Experimental Laboratory (C2BMC-X). Capabilities and functions located at the JNIC supporting the development of the BMDS C2BMC include: integration and test of C2BMC software Spirals; C2BMC experimentation supported by broad area announcements for independently developed software which may have application in the BMDS and C2BMC operations and maintenance, licenses and upgrades for the BITC and C2BMC-X laboratories. Additional software development laboratories are also maintained at the prime contractor's facilities in Huntsville AL and Colorado Springs CO.</p> <p><b>OPERATIONS AND SUPPORT</b></p> <p>C2BMC Program Operations and Support consists of On-Site Support, Help Desk activities, and hardware/software maintenance. On-Site Support provides assistance to the System Administrator, assigned by the site (e.g. Component Commands), with the general operational support of the C2BMC system, integration of the C2BMC support processes into the site's support regimen, and daily operational support for the C2BMC system as part of a transition plan. Prime contractor personnel provide ``over-the-shoulder`` support to users when requested, or alternatively, contact the Help Desk. The Help Desk is located in Colorado Springs, CO. The help desk provides technical support to onsite personnel and to the C2BMC end-user, review of hardware/software problems and coordination of Commercial Off-the-Shelf (COTS) developer/vendor service calls, trouble ticket work-off, tracking and implementing documented escalation procedures, collecting of metrics and maintenance of the Help Desk website. This service will be delivered on a 24x7x365 basis. Maintenance of the C2BMC Element covers both software and hardware maintenance. The goal is to maintain the BMDS C2BMC at a pre-determined availability. Software maintenance support will be based on the use of Help Desk personnel who will field incoming trouble calls and request software engineering support as required. Scheduled (preventative and non-critical remedial) and unscheduled hardware maintenance issues will be managed by the prime contractor as appropriate.</p> <p>Mobile X-Lab C2BMC Capability is also supported to enable a rapidly deployable, flexible C2BMC suite to meet unexpected threats, participate in exercises, or act as a back up to fixed sites.</p>			
<b><u>B. Accomplishments/Planned Program</u></b>			
	FY 2004	FY 2005	FY 2006
C2BMC Element	0	0	0
RDT&E Articles (Quantity)	0	0	0
<p>FY 2007 Planned Program:</p> <ul style="list-style-type: none"> <li>• Initiate Block 2010 definition</li> <li>• Identify risk reduction efforts</li> <li>• Identify and pursue advanced concepts and technology to enable fielding of future Block 2010 capability</li> <li>• Ensure compliance with DOD and international networking standards</li> <li>• Identify interfaces with evolving DOD network architectures</li> </ul>			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date <b>February 2005</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>
<b><u>D. Acquisition Strategy</u></b>  The C2BMC acquisition strategy is consistent with the Missile Defense Agency's capability based acquisition strategy that emphasizes testing, spiral development, evolutionary acquisition, and knowledge-based funding through the use of two-year capability blocks. The Missile Defense National Team - C2BMC (Industry) (MDNTB(I)) led by Lockheed Martin Mission Systems is the prime contractor under an Other Transactions Agreement. The prime contractor is charged with the development, fielding and support of the C2BMC prototype. The MDNTB(I) performs development and testing of C2BMC products in Arlington, VA, Huntsville, AL, and Colorado Springs, CO. C2BMC element FFRDC/UARC, SETA and Government personnel are also fully integrated as part of the MDNTB to function in an integrated product team environment.		

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>I. Product Development Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>C2BMC Element</b>										
C2BMC HW/SW Development/I&T	SS/CPAF	MDNTB/ Colorado Springs, CO	0	0	N/A	0	N/A	1,723	1Q	1,723
C2BMC HW/SW Development/I&T	SS/CPAF	MDNTB/ Huntsville, AL	0	0	N/A	0	N/A	2,835	1Q	2,835
C2BMC Product Engineering & Development	SS/CPAF	MDNTB/ Washington, DC	0	0	N/A	0	N/A	6,242	1Q	6,242
EW/CEW; GCCS; JDP; JRE; ISC2; ECPs	Various	Services, DISA, Agencies/ Various	0	0	N/A	0	N/A	700	1Q	700
Subtotal Product Development			0	0		0		11,500		11,500
<b>Remarks</b>										
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Support Costs										
<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 2005</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>0603889C Ballistic Missile Defense Products</b>				
<b>III. Test and Evaluation Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 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 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost			0	0		0		11,500		11,500
<b>Remarks</b>										



# UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																				Date February 2005														
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)												R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products																						
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011					
	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		
C2BMC Element																																		
Spiral 10.1 Development, Testing and Integration																						Δ					Δ							
Spiral 10.2 Development, Testing and Integration																						Δ						Δ						
Spiral 10.1 and 10.2 Content Agreement																							☆											
Spiral 10.3 Development, Testing and Integration																						Δ								Δ				
Spiral 10.4 Development, Testing and Integration																						Δ											Δ	
Spiral 10.3 and 10.4 Content Agreement																											☆							
Site Activation																																		
Full C2BMC Suite Installed - Location TBD																														Δ				Δ

# UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
C2BMC Element								
Spiral 10.1 Development, Testing and Integration						1Q-4Q	1Q-2Q	
Spiral 10.2 Development, Testing and Integration						1Q-4Q	1Q-4Q	
Spiral 10.1 and 10.2 Content Agreement						3Q		
Spiral 10.2 VRR							1Q	
Spiral 10.3 Development, Testing and Integration						2Q-4Q	1Q-4Q	1Q-2Q
Spiral 10.4 Development, Testing and Integration						2Q-4Q	1Q-4Q	1Q-4Q
Spiral 10.3 and 10.4 Content Agreement							3Q	
Block 2010 BMDSS					4Q			
Block 2010 ECR					4Q			
Block 2010 SRR						1Q		
Block 2010 F/PCA							1Q	
Site Activation								
Full C2BMC Suite Installed - Location TBD							4Q	4Q
Upgrade Three C2BMC Sites							3Q-4Q	3Q-4Q

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>																	
<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>																			
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603889C Ballistic Missile Defense Products</b>																			
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011															
0702 Hercules Block 2004	4,575	0	0	0	0	0	0	0															
RDT&E Articles Qty	4	0	0	0	0	0	0	0															
<p><i>Note:</i>  This Project covers the Block 2004 products of Project Hercules. The Hercules Block 2006, Block 2008, and Block 2010 products are described in this same PE (0603889C) under projects 0802, 0902, and 0002 respectively. The Hercules core elements are described in PE 0603890C, BMD Core, Project 0202. In FY 2005, Project 0702, funding for Hercules Block 2004 Products, is moved to Projects 0802, 0902, and 0002 to reflect the shift in focus to future Block capabilities.</p>																							
<p><b><u>A. Mission Description and Budget Item Justification</u></b></p> <p>Project Hercules is a national effort to develop robust detection, tracking, and discrimination algorithms to counter off nominal and evolving missile threats. Hercules is also developing a physics-based Decision Architecture that applies advanced decision theory to future BMDS command, control, and battle management (C2/BM) concepts. In addition to a general program to develop algorithms useful against targets in all phases of flight, Hercules has specific projects to develop algorithms for forward based sensors, the Decision Architecture, and mitigating countermeasures. Hercules develops algorithms to enhance BMDS element capabilities in Block 06, 08, 10 and beyond and will provide these algorithms to the BMDS elements for insertion into their respective programs.</p>																							
<p><b><u>B. Accomplishments/Planned Program</u></b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td></td> <td style="text-align: center;">FY 2004</td> <td style="text-align: center;">FY 2005</td> <td style="text-align: center;">FY 2006</td> <td style="text-align: center;">FY 2007</td> </tr> <tr> <td>Algorithm Productization and Test</td> <td style="text-align: center;">500</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> <tr> <td>RDT&amp;E Articles (Quantity)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> </table>										FY 2004	FY 2005	FY 2006	FY 2007	Algorithm Productization and Test	500	0	0	0	RDT&E Articles (Quantity)	0	0	0	0
	FY 2004	FY 2005	FY 2006	FY 2007																			
Algorithm Productization and Test	500	0	0	0																			
RDT&E Articles (Quantity)	0	0	0	0																			
<p>FY 2004 Accomplishment:</p> <ul style="list-style-type: none"> <li>Hercules successfully tested an initial prototype of the Decision Architecture, an approach to applying advanced decision theory concepts to C2BMC. Elements of the Decision Architecture underwent performance characterization testing and completed real time testing on several system level tests in the BMD Test Bed. The Decision Architecture prototype was upgraded. Successful real time and digital tests for discrimination and fusion algorithms were also completed and were a part of the BMDS spiral upgrades.</li> </ul>																							
	FY 2004	FY 2005	FY 2006	FY 2007																			
Project Hercules	4,075	0	0	0																			
RDT&E Articles (Quantity)	4	0	0	0																			
<p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>Delivered three algorithms to the forward based sensor team for integration into the TPS-X BMD Test Bed radar and their BMD Radar. Completed testing on a discrimination algorithm being integrated into the SBX radar.</li> <li>Conducted yearly Project Hercules Program Review to discuss prior year progress and upcoming plans for algorithm development activities associated with weapon, sensor, and C2BMC discrimination and tracking upgrades in all future BMDS blocks.</li> <li>Completed quarterly algorithm test readiness reviews to determine algorithm maturity and readiness for algorithm performance characterization testing.</li> </ul>																							

Project: 0702 Hercules Block 2004

MDA Exhibit R-2A (PE 0603889C)

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date <b>February 2005</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>
<b><u>D. Acquisition Strategy</u></b>  Project Hercules follows MDA's capability-based acquisition strategy. This emphasizes assessment, spiral-development testing and evolutionary acquisition through the definition of two-year capability blocks.  Project Hercules activities are performed by subject matter experts composed of Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), private industry including major defense contractors, Government laboratories, and System Engineering and Technical Assistance (SETA) contractors.  Battle manager, weapon, and sensor capability improvements can be transitioned into the future operational force structure by integrating the Hercules algorithms into BMDS components. BMDS component managers plan, budget, and procure the necessary hardware and software for deployed and sustained operational forces.		

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>I. Product Development Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 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 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
MDA Hercules	Various	Various	575	0	N/A	0	N/A	0	N/A	575
Subtotal Support Costs			575	0		0		0		575
<b>Remarks</b>										
<b>III. Test and Evaluation Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
MIT/LL	CPFF	Hanscomb, AFB	1,516	0	N/A	0	N/A	0	N/A	1,516
Northrop Grumman XonTech	CPFF	Van Nuys, CA	1,139	0	N/A	0	N/A	0	N/A	1,139
SMDC	Various	Various	1,345	0	N/A	0	N/A	0	N/A	1,345
Subtotal Test and Evaluation			4,000	0		0		0		4,000
<b>Remarks</b>										

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date <b>February 2005</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>					
<b>IV. Management Services Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost			4,575	0		0		0		4,575
<b>Remarks</b>										

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																				Date February 2005												
APPROPRIATION/BUDGET ACTIVITY															R-1 NOMENCLATURE																	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)															0603889C Ballistic Missile Defense Products																	
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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				
Hercules																																
Hercules Program Review	▲																															
Algorithm Test Readiness Reviews	▲	▲	▲	▲																												
Post Flight Test Data Analysis	▲	→			▲																											



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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Hercules								
Hercules Program Review	1Q							
Algorithm Test Readiness Reviews	1Q,2Q,3Q,4Q							
Post Flight Test Data Analysis	1Q-4Q							

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>																	
<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>																			
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603889C Ballistic Missile Defense Products</b>																			
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011															
0802 Hercules Block 2006	26,956	37,161	7,521	0	0	0	0	0															
RDT&E Articles Qty	0	0	0	0	0	0	0	0															
<p><i>Note:</i>  This Project covers the Block 2006 products of Project Hercules. The Hercules Block 2004, Block 2008 and Block 2010 projects are described in this same PE (0603889C) under projects 0702, 0902, and 0002 respectively. The Hercules core elements are described in PE 0603890C, BMD Core, Project 0202. In FY 2005, all of Project 0702, Hercules Block 2004 Products, is moved to Project 0802, 0902, and 0002, Hercules Block 2006, Block 2008, and Block 2010 to reflect the shift in focus to future Block capabilities. Also in FY 2005, a portion of PE 0603890C, BMDS Core, Project 0202, Hercules Core, is moved here to Project 0802, Hercules Block 06.</p>																							
<p><b><u>A. Mission Description and Budget Item Justification</u></b></p> <p>Project Hercules is a national effort to develop robust detection, tracking, and discrimination algorithms to counter off nominal and evolving missile threats. Hercules is also developing a physics-based Decision architecture that applies advanced decision theory to future BMDS command, control, and battle management (C2/BM) concepts. In addition to a general program to develop algorithms useful against targets in all phases of flight, Hercules has specific projects to develop algorithms for forward based sensors, the Decision Architecture, and mitigating countermeasures. Hercules develops algorithms to enhance BMDS element capabilities in Block 06, 08, 10 and beyond and will provide these algorithms to the BMDS elements for insertion into their respective programs.</p> <p>Algorithm development and testing for Block 06 is focused on spiral capability enhancements for midcourse and forward based sensors and battle management systems. These algorithms improve the functionality of the Block 06 radar and electro-optical sensors, enabling them to better perform their Engagement Sequence Group roles. Fusion and decision theory software is also under development and being provided to the C2BMC element developers for their evaluation and inclusion in Block 06 or Block 08.</p>																							
<p><b><u>B. Accomplishments/Planned Program</u></b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td></td> <td style="text-align: center;">FY 2004</td> <td style="text-align: center;">FY 2005</td> <td style="text-align: center;">FY 2006</td> <td style="text-align: center;">FY 2007</td> </tr> <tr> <td>Project Hercules</td> <td style="text-align: center;">26,956</td> <td style="text-align: center;">37,161</td> <td style="text-align: center;">7,521</td> <td style="text-align: center;">0</td> </tr> <tr> <td>RDT&amp;E Articles (Quantity)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> </table>										FY 2004	FY 2005	FY 2006	FY 2007	Project Hercules	26,956	37,161	7,521	0	RDT&E Articles (Quantity)	0	0	0	0
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Project Hercules	26,956	37,161	7,521	0																			
RDT&E Articles (Quantity)	0	0	0	0																			
<p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>● Provided algorithm concepts and test results to support the evaluation and subsequent integration of enhancements to radar and elector-optical systems included in Block 06.</li> <li>● Successfully conducted real time testing of a multi-radar track fusion concept</li> <li>● Successfully conducted real time testing of a prototype of the Decision Architecture C2BMC battle management support software.</li> <li>● Conducted yearly Project Hercules Program Review to discuss prior year progress and upcoming plans for algorithm development activities associated with weapon, sensor, and C2BMC discrimination and tracking upgrades in all future BMDS blocks.</li> <li>● Completed quarterly algorithm test readiness reviews to determine algorithm maturity and readiness for algorithm performance characterization testing.</li> </ul>																							

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<p>FY 2005 Planned Accomplishments:</p> <ul style="list-style-type: none"> <li>• Provide algorithm concepts and test results to BMDS elements to support the evaluation and integration of enhancements to BMDS battle management components, weapons components, and radar and electro-optical sensing components included in Block 06.</li> <li>• Deliver a prototype Decision Architecture, a real time battle management support tool that provides information supporting weapons and sensor resource allocation based upon information being received from multiple sensors throughout the layered BMDS. This prototype will be evaluated by the C2BMC acquisition team for inclusion in the C2BMC element.</li> <li>• Conduct quarterly algorithm reviews to determine algorithm maturity and readiness for algorithm performance characterization testing.</li> <li>• Conduct yearly Project Hercules Program Review to discuss prior year progress and upcoming plans for algorithm development activities associated with weapon, sensor, and C2BMC discrimination and tracking upgrades in all future BMDS blocks.</li> </ul> <p>FY 2006 Planned Program:</p> <ul style="list-style-type: none"> <li>• Support BMDS sensor and C2BMC component integration and testing related to algorithms selected for insertion into Block 2006.</li> <li>• Conduct yearly Project Hercules Program Review to discuss prior year progress and upcoming plans for algorithm development activities associated with weapon, sensor, and C2BMC discrimination and tracking upgrades in all future BMDS blocks.</li> </ul> <p><b>C. 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Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754
<p><b><u>D. Acquisition Strategy</u></b></p> <p>Project Hercules follows MDA's capability-based acquisition strategy. This emphasizes assessment, spiral-development testing and evolutionary acquisition through the definition of two-year capability blocks.</p> <p>Project Hercules activities are performed by subject matter experts composed of Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), private industry including major defense contractors, Government laboratories, and System Engineering and Technical Assistance (SETA) contractors.</p> <p>Battle manager, weapon, and sensor capability improvements can be transitioned into the future operational force structure by integrating the Hercules algorithms into BMDS components. BMDS component managers plan, budget, and procure the necessary hardware and software for deployed and sustained operational forces.</p>									

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>I. Product Development Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
Boeing	CPAF	Arlington, VA	2,200	1,944	1Q	500	1Q	0	N/A	4,644
Lockheed Martin	CPFF	Sunnyvale, CA	3,000	1,111	2Q	737	1Q	0	N/A	4,848
Raytheon	CPFF	Boston, MA	4,120	1,111	2/3Q	675	1Q	0	N/A	5,906
SPARTA	CPFF	Arlington, VA	3,470	7,419	1Q	529	1Q	0	N/A	11,418
Various	MIPR	Various	188	259	1Q	0	1Q	0	N/A	447
ONR	MIPR	Arlington, VA	250	278	1Q	250	1Q	0	N/A	778
MIT/LL	FFRDC	Hanscomb, AFB	3,361	5,167	1Q	2,049	1Q	0	N/A	10,577
Northrop Grumman XonTech	CPFF	Van Nuys, CA	1,000	2,047	1Q	607	1Q	0	N/A	3,654
SMDC Hercules	MIPR	Various	600	2,313	1Q	0	1Q	0	N/A	2,913
PRA	CPFF	Arlington, VA	1,000	0	1Q	292	1Q	0	N/A	1,292
Subtotal Product Development			19,189	21,649		5,639		0		46,477
<b>Remarks</b>										
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Support Costs										
<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 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>III. Test and Evaluation Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
SMDC Hercules	MIPR	Huntsville, Al	519	778	1Q	0	N/A	0	N/A	1,297
AFRL-Eglin AFB	MIPR	Eglin, FL	519	471	1Q	100	1Q	0	N/A	1,090
MIT/LL	CPFF	Hanscomb, AFB	1,849	7,170	1Q	557	1Q	0	N/A	9,576
Northrop Grumman XonTech	CPFF	Van Nuys, CA	1,966	4,021	1Q	0	N/A	0	N/A	5,987
Decibel Research	CPFF	Huntsville, AL	0	687	1Q	150	1Q	0	N/A	837
JNIC	MIPR	Colorado Springs, CO	0	278	1Q	0	N/A	0	N/A	278
Subtotal Test and Evaluation			4,853	13,405		807		0		19,065
<b>Remarks</b>										
<b>IV. Management Services Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
Various	MIPR	Various	1,457	616	1Q	575	1Q	0	N/A	2,648
SMDC Hercules	MIPR	Huntsville, AL	1,457	1,491	1Q	500	1Q	0	N/A	3,448
Subtotal Management Services			2,914	2,107		1,075		0		6,096
<b>Remarks</b>										
Project Total Cost			26,956	37,161		7,521		0		71,638
<b>Remarks</b>										

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																				Date February 2005												
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)												R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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
Hercules																																
Hercules Program Review	▲				▲				Δ																							
Algorithm Test Readiness Reviews	▲	▲	▲	▲	▲	Δ	Δ	Δ	Δ	Δ	Δ	Δ																				
Post-Flight Test Data Analysis	▲	→			▲	→							Δ																			
Countermeasure Mitigation Suite to Test							Δ																									
Decision Architecture Prototype Delivery								Δ																								

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603889C Ballistic Missile Defense Products</b>				
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0902 Hercules Block 2008	22,532	46,095	52,096	48,755	23,881	13,319	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0	0
<p><i>Note:</i>  This Project covers the Block 2008 products of Project Hercules. The Hercules Block 2004, Block 2006 and Block 2010 projects are described in this same PE (0603889C) under projects 0702, 0802, and 0002 respectively. The Hercules core elements are described in PE 0603890C, BMD Core, Project 0202. In FY 2005, all of Project 0702, Hercules Block 2004 Products, is moved to Project 0802, 0902, and 0002, Hercules Block 2006, Block 2008, and Block 2010 to reflect the shift in focus to future Block capabilities. Also in FY 2005, a portion of PE 0603890C, BMDS Core, Project 0202, Hercules Core, is moved here to Project 0902, Hercules Block 08.</p>								
<b><u>A. Mission Description and Budget Item Justification</u></b>								
<p>Project Hercules is a national effort to develop robust detection, tracking, and discrimination algorithms to counter off nominal and evolving missile threats. Hercules is also developing a physics-based Decision architecture that applies advanced decision theory to future BMDS command, control, and battle management (C2/BM) concepts. In addition to a general program to develop algorithms useful against targets in all phases of flight, Hercules has specific projects to develop algorithms for forward based sensors, the Decision Architecture, and mitigating countermeasures. Hercules develops algorithms to enhance BMDS element capabilities in Block 06, 08, 10, and beyond and will provide these algorithms to the BMDS elements for insertion into their respective programs.</p> <p>Algorithm development and testing for Block 08 is focused on spiral capability enhancements for battle management systems and sensors functioning in all phases of flight. These algorithms improve the functionality of the Block 08 radar and electro-optical sensors, enabling them to better perform their Engagement Sequence Group roles. Fusion and decision theory software is also under development and being provided to the C2BMC element developers for their evaluation and inclusion in Block 06, Block 08, or Block 10.</p>								
<b><u>B. Accomplishments/Planned Program</u></b>								
	FY 2004	FY 2005	FY 2006	FY 2007				
Project Hercules	22,532	46,095	52,096	48,755				
RDT&E Articles (Quantity)	0	0	0	0				
<p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>• Provided algorithm concepts and test results to support the evaluation and subsequent integration of enhancements to radar and elector-optical systems included in Block 08.</li> <li>• Initiated new algorithm studies to counter a category of countermeasure techniques.</li> <li>• Conducted yearly Project Hercules Program Review to discuss prior year progress and upcoming plans for algorithm development activities associated with weapon, sensor, and C2BMC discrimination and tracking upgrades in all future BMDS blocks.</li> <li>• Completed quarterly algorithm test readiness reviews to determine algorithm maturity and readiness for algorithm performance characterization testing.</li> </ul> <p>FY 2005 Planned Accomplishments:</p> <ul style="list-style-type: none"> <li>• Provide algorithm concepts and test results to BMDS elements to support the evaluation and integration of enhancements to BMDS battle management components, weapon components, and radar and electro-optical sensing components included in Block 08.</li> </ul>								

Project: 0902 Hercules Block 2008

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date <b>February 2005</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>
<ul style="list-style-type: none"> <li>• Deliver advanced algorithms or algorithms suites to the performance characterization test team that will improve BMDS performance against countermeasures.</li> <li>• Conduct research for future improvements to the Decision Architecture prototype being delivered to battle manager component developers in FY05.</li> <li>• Conduct quarterly algorithm test readiness reviews to determine algorithm maturity and readiness for algorithm performance characterization testing.</li> <li>• Conduct yearly Project Hercules Program Review to discuss prior year progress and upcoming plans for algorithm development activities associated with weapon, sensor, and C2BMC discrimination and tracking upgrades in all future BMDS blocks</li> </ul> <p>FY 2006 Planned Program:</p> <ul style="list-style-type: none"> <li>• Deliver an enhancement to the Decision Architecture prototype delivered in FY05, a real time battle management tool that provides information supporting weapons and sensor resource allocation based upon information being received from multiple sensors throughout the layered BMDS. These enhancements will be evaluated by the C2BMC acquisition team for inclusion in the C2BMC element.</li> <li>• Conduct extensive performance characterization testing of algorithms suites developed to provide improved BMDS performance against countermeasures.</li> <li>• Conduct research for future improvements to the Decision Architecture prototype being delivered to battle manager component developers in FY06.</li> <li>• Conduct quarterly algorithm test readiness reviews to determine algorithm maturity and readiness for algorithm performance characterization testing.</li> <li>• Conduct yearly Project Hercules Program Review to discuss prior year progress and upcoming plans for algorithm development activities associated with weapon, sensor, and C2BMC discrimination and tracking upgrades in all future BMDS blocks</li> </ul> <p>FY 2007 Planned Program:</p> <ul style="list-style-type: none"> <li>• Continue algorithm development and testing for a variety of advanced battle management and sensor discrimination and tracking techniques for both individual sensor and multiple-sensor netting discrimination and tracking function improvements.</li> <li>• Deliver an enhancement to the Decision Architecture prototype delivered in FY06, a real time battle management tool that provides information supporting weapons and sensor resource allocation based upon information being received from multiple sensors throughout the layered BMDS. These enhancements will be evaluated by the C2BMC acquisition team for inclusion in the C2BMC element.</li> <li>• Support BMDS sensor and C2BMC component integration and testing related to algorithms selected for insertion into Block 2008.</li> <li>• Conduct extensive performance characterization testing of algorithms suites developed to provide improved BMDS performance against countermeasures.</li> <li>• Conduct quarterly algorithm test readiness reviews to determine algorithm maturity and readiness for algorithm performance characterization testing.</li> <li>• Conduct yearly Project Hercules Program Review to discuss prior year progress and upcoming plans for algorithm development activities associated with weapon, sensor, and C2BMC discrimination and tracking upgrades in all future BMDS blocks.</li> </ul>		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date <b>February 2005</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>
<b><u>D. Acquisition Strategy</u></b>  Project Hercules follows MDA's capability-based acquisition strategy. This emphasizes assessment, spiral-development testing and evolutionary acquisition through the definition of two-year capability blocks.  Project Hercules activities are performed by subject matter experts composed of Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), private industry including major defense contractors, Government laboratories, and System Engineering and Technical Assistance (SETA) contractors.  Battle manager, weapon, and sensor capability improvements can be transitioned into the future operational force structure by integrating the Hercules algorithms into BMDS components. BMDS component managers plan, budget, and procure the necessary hardware and software for deployed and sustained operational forces.		

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>							Date <b>February 2005</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>I. Product Development Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
Lockheed Martin	CPFF	Sunnyvale, CA	2,486	2,212	2Q	4,075	1Q	4,075	1Q	12,848
Raytheon	CPFF	Boston, MA	1,789	3,993	2/3Q	5,025	1Q	5,025	1Q	15,832
SPARTA	CPFF	Arlington, VA	4,411	4,364	1Q	1,507	1Q	1,507	1Q	11,789
Various	MIPR	Various	665	1,066	1Q	1,245	1Q	563	1Q	3,539
ONR	MIPR	Arlington, VA	0	590	1Q	1,020	1Q	1,020	1Q	2,630
AFRL-Eglin AFB	MIPR	Eglin, FL	1,324	1,800	1Q	1,850	1Q	1,850	1Q	6,824
PRA	CPFF	Arlington, VA	1,355	2,209	1Q	3,249	1Q	3,249	1Q	10,062
MIT/LL	CPFF	Hanscomb, AFB	5,860	8,680	1Q	9,209	1Q	7,209	1Q	30,958
Northrop Grumman XonTech	CPFF	Van Nuys, CA	4,642	8,948	1Q	5,655	1Q	3,655	1Q	22,900
SMDC	MIPR	Huntsville, AL	0	1,474	1Q	7,375	1Q	7,370	1Q	16,219
Subtotal Product Development			22,532	35,336		40,210		35,523		133,601
<b>Remarks</b>										
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
MIT/LL	CPFF	Boston, MA	0	0	N/A	1,500	1Q	1,500	1Q	3,000
Subtotal Support Costs			0	0		1,500		1,500		3,000
<b>Remarks</b>										

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date <b>February 2005</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>					
<b>III. Test and Evaluation Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
AFRL-Eglin AFB	MIPR	Eglin, FL	0	1,398	1Q	2,350	1/2Q	2,350	1/2Q	6,098
CSC	CPFF	Fairfax, VA	0	1,019	1Q	2,380	1/2Q	2,380	1/2Q	5,779
MIT/LL	FFRDC	Hanscomb AFB	0	2,153	1Q	4,468	1/2Q	3,964	1/2Q	10,585
Decibel Research	MIPR	Huntsville, AL	0	851	1Q	1,188	1/2Q	1,188	1/2Q	3,227
Subtotal Test and Evaluation			0	5,421		10,386		9,882		25,689
<b>Remarks</b>										
<b>IV. Management Services Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
CSC-SETA	FFP	Fairfax, VA	0	1,334	1Q	0	N/A	1,350	1Q	2,684
SPARTA-SETA	FFP	Arlington, VA	0	1,221	1Q	0	N/A	500	1Q	1,721
Various	MIPR	Various	0	929	1Q	0	N/A	0	1Q	929
SMDC Hercules	MIPR	Huntsville, AL	0	1,854	1Q	0	N/A	0	1Q	1,854
Subtotal Management Services			0	5,338		0		1,850		7,188
<b>Remarks</b>										
Project Total Cost			22,532	46,095		52,096		48,755		169,478
<b>Remarks</b>										

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																								Date February 2005											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)												R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products																							
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011						
	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							
Hercules																																			
Hercules Program Review	▲				▲				Δ				Δ				Δ				Δ														
Algorithm Test Readiness Reviews	▲	▲	▲	▲	▲	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ											
Post-Flight Test Data Analysis	▲	▲			▲	▲							▲										▲												
Decision Architecture Upgrade Delivery												Δ				Δ																			

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Hercules								
Hercules Program Review	1Q	1Q	1Q	1Q	1Q	1Q		
Algorithm Test Readiness Reviews	1Q,2Q,3Q,4Q	1Q,2Q,3Q,4Q	1Q,2Q,3Q,4Q	1Q,2Q,3Q,4Q	1Q,2Q,3Q,4Q	1Q,2Q,3Q,4Q		
Post-Flight Test Data Analysis	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
Decision Architecture Upgrade Delivery			4Q	4Q				



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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603889C Ballistic Missile Defense Products</b>				
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0002 Hercules Block 2010	0	0	11,000	18,451	42,000	52,000	65,071	65,856
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

Project Hercules is a national effort to develop robust detection, tracking, and discrimination algorithms to counter off nominal and evolving missile threats. Hercules is also developing a physics-based Decision architecture that applies advanced decision theory to future BMDS command, control, and battle management (C2/BM) concepts. In addition to a general program to develop algorithms useful against targets in all phases of flight, Hercules has specific projects to develop algorithms for forward based sensors, the Decision Architecture, and mitigating countermeasures. Hercules develops algorithms to enhance BMDS element capabilities in Block 06, 08, 10, and beyond and will provide these algorithms to the BMDS elements for insertion into their respective programs.

Algorithm development and testing for Block 10 is focused on spiral capability enhancements for battle management systems and sensors functioning in all phases of flight. These algorithms improve the functionality of the Block 10 radar and electro-optical sensors, enabling them to better perform their Engagement Sequence Group roles. Fusion and decision theory software is also under development and being provided to the C2BMC element developers for their evaluation and inclusion in Block 06, Block 08, or Block 10.

**B. Accomplishments/Planned Program**

	FY 2004	FY 2005	FY 2006	FY 2007
Project Hercules	0	0	11,000	18,451
RDT&E Articles (Quantity)	0	0	0	0

FY 2006 Planned Program:

- Initiate algorithm development for discrimination and tracking improvements for new layers of the BMDS as weapons, sensors, and C2BMC components are added in Block 10 and beyond.
- Conduct quarterly algorithm reviews to determine algorithm maturity and readiness for algorithm performance characterization testing.
- Conduct yearly Project Hercules Program Review to discuss prior year progress and upcoming plans for algorithm development activities associated with weapon, sensor, and C2BMC discrimination and tracking upgrades in all future BMDS blocks.

FY 2007 Planned Program:

- Continue algorithm development for a variety of advanced sensing techniques.
- Conduct quarterly algorithm reviews to determine algorithm maturity and readiness for algorithm performance characterization testing.
- Conduct yearly Project Hercules Program Review to discuss prior year progress and upcoming plans for algorithm development activities associated with weapon, sensor, and C2BMC discrimination and tracking upgrades in all future BMDS blocks.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
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PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2005
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products
<b><u>D. Acquisition Strategy</u></b>  Project Hercules follows MDA's capability-based acquisition strategy. This emphasizes assessment, spiral-development testing and evolutionary acquisition through the definition of two-year capability blocks.  Project Hercules activities are performed by subject matter experts composed of Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), private industry including major defense contractors, Government laboratories, and System Engineering and Technical Assistance (SETA) contractors.  Battle manager, weapon, and sensor capability improvements can be transitioned into the future operational force structure by integrating the Hercules algorithms into BMDS components. BMDS component managers plan, budget, and procure the necessary hardware and software for deployed and sustained operational forces.		

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>I. Product Development Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
Hercules	MIPR	Arlington, Huntsville	0	0	N/A	7,000	1Q	13,000	1Q	20,000
Subtotal Product Development			0	0		7,000		13,000		20,000
<b>Remarks</b>										
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
MDA Hercules	MIPR	Huntsville, Arlington, Eglin	0	0	N/A	1,000	1Q	3,000	1Q	4,000
Subtotal Support Costs			0	0		1,000		3,000		4,000
<b>Remarks</b>										
<b>III. Test and Evaluation Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
MDA Hercules	MIPR	Huntsville, Arlington	0	0	N/A	2,000	1Q	1,000	1Q	3,000
Subtotal Test and Evaluation			0	0		2,000		1,000		3,000
<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 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>IV. Management Services Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>Project Hercules</b>										
Hercules	MIPR	Arlington	0	0	N/A	1,000	1Q	1,451	1Q	2,451
Subtotal Management Services			0	0		1,000		1,451		2,451
<b>Remarks</b>										
Project Total Cost			0	0		11,000		18,451		29,451
<b>Remarks</b>										

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																				Date February 2005												
APPROPRIATION/BUDGET ACTIVITY												R-1 NOMENCLATURE																				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)												0603889C Ballistic Missile Defense Products																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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				
Hercules																																
Algorithms and DA Prototype ATT									Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ				
Hercules Program Review									Δ				Δ				Δ				Δ				Δ							
Post Flight Test Data Analysis									Δ																			Δ				

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Hercules								
Algorithms and DA Prototype ATT			1Q,2Q,3Q,4Q	1Q,2Q,3Q,4Q	1Q,2Q,3Q,4Q	1Q,2Q,3Q,4Q	1Q,2Q,3Q,4Q	1Q,2Q,3Q,4Q
Hercules Program Review			1Q	1Q	1Q	1Q	1Q	1Q
Post Flight Test Data Analysis			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603889C Ballistic Missile Defense Products</b>				
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0703 Joint Warfighter Support Block 2004	32,748	24,178	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0	0
<p><i>Note:</i>  Starting in FY 2004, funding for this effort has been allocated across Ballistic Missile Defense Products PE 0603889C in two-year capability Blocks under Project 0703 (FY 2004-2005), Project 0803 (FY 2006-2007), Project 0903 (FY 2008-2009) and Project 0003 (FY 2010-2011).</p>								
<p><b><u>A. Mission Description and Budget Item Justification</u></b></p> <p>As part of the total BMDS, The Joint Warfighter Support Program (JWSP) enables MDA to work collaboratively with the Joint Warfighters in defining, testing, and deploying/employing the various BMDS Block capabilities.</p> <p>The JWSP consists of six primary activities:</p> <ul style="list-style-type: none"> <li>• Conducting Exercises and Wargames for mission training, qualification, certification and rehearsal of the Combatant Commanders (COCOMs) and refining development of the BMDS. This program focuses on integrating the Geographic COCOMs exercises into a Global Missile defense construct known as the Integrated Missile Defense War Game (IMD/WG) series. The IMD/ WG series address the full spectrum of the short, medium, and long range ballistic missile threat, from launch to impact, and involves the integrated planning and execution of all participating COCOMs. with the goal of improving performance and validating BMDS capabilities. The exercises and wargames also enable MDA system engineering development and BMD system level interoperability testing. Additionally, the exercises and wargames create the conditions for continued international participation in selected MDA activities and projects.</li> <li>• Developing and maintaining Training and Education programs, and Resource Programming policies between MDA and the Joint Warfighters and Services. These efforts have the long range goals to developing a distributed, interactive training and wargaming capability across the BMDS; developing BMDS education capabilities within the Service Schools, and conducting training and education for selected BMDS staffs and organizations on emerging BMDS Block deployment capabilities.</li> <li>• Producing Concepts, Plans and Experiments that look at evolving BMDS capabilities and their impact on the Joint Warfighter's employment of the BMDS. The results enable development of operational concepts and provide warfighter feedback to developers for incorporation in future Blocks.</li> <li>• Creating, developing and coordinating of BMDS-wide Integrated Logistics Support policies and procedures. These activities ensure that the requisite logistic support policies and procedures will be in place to sustain the deployed BMDS Block capabilities. This effort develops transition plans considering doctrine, organization, training, martial, leadership, personnel, facilities (DOTMLPF) and funding to improve planning and predictability for the Military departments and Combatant Commanders. The plans include not only historical precedent, but also a forward look regarding what Services and Combatant Commands may be getting, when they will be getting, and support responsibilities.</li> <li>• Geographical Combatant Commander (GCC) Support. This activity enables COCOM participation in MDA activities, such as wargames, exercise, table tops, and conferences. COCOM involvement insures that MDA and Joint Warfighter continue to work together to define, field, and make operational the initial BMDS capability and subsequent new Block capabilities.</li> <li>• Sustainment and Operations Support; The MDA Operations Center (MOC). This activity facilitates communications between the MDA and operational activities: to maintain situational awareness on the status of the BMDS; coordinate, when necessary, the activities required to return it to a specified status; and ensure the safe and reliable operation of the BMDS. In this role the MOC serves as the central communications node for BMDS operations, situational monitoring, and information collection in support of the Combatant Commanders' missions to conduct missile defense.</li> </ul>								



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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>	
<b><u>B. Accomplishments/Planned Program</u></b>				
	FY 2004	FY 2005	FY 2006	FY 2007
Exercises And Wargames	26,315	20,986	0	0
RDT&E Articles (Quantity)	0	0	0	0
<p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>Completed the Integrated Missile Defense - 4 Wargame series which enabled USSTRATCOM, USNORTHCOM and USPACOM to successfully rehearse for achievement of initial BMDS capability.</li> <li>Completed regional exercises Joint Project Optic Windmill number eight (JPOW 8); Eagle Resolve; Reception, Staging, Onward movement and Integration 2004 (RSOI 04); and Ulchi Focus Lens 2004 (UFL 04). These events enabled MDA to remain engaged with the Geographic COCOMs, facilitated international interest and participation in MDA activities, and enabled future integration of regional Exercises into the IMD WG construct.</li> <li>Demonstrated the employment of the BMDS in a mature Link-16/Joint Range Extension communications architecture and enabled the COCOMs to develop/validate required BMD operational concepts, plans, and procedures.</li> </ul> <p>FY 2005 Planned Accomplishments:</p> <p>FY05 will initiate activities to integrate regional BMD exercises/wargames into the IMD WG ``umbrella``. This integration aims to provide a seamless continuum of missile defense plans and concepts to address the full spectrum of ballistic missile threats facing both the geographic COCOMs and USSTRATCOM. It also seeks to refine the processes and procedures to allocate various BMDS capabilities among affected COCOMs. In FY05, the following recurring events (either annual or bi-annual) will be conducted, each having specific objectives tailored to MDA developmental testing and COCOM training/mission rehearsal/operational planning needs for deployed MDA BMDS capabilities.</p> <ul style="list-style-type: none"> <li>Integrated Missile Defense War Game IMD WG in five increments:             <ul style="list-style-type: none"> <li>IMD WG - Exercise Juniper Cobra - Rehearses EUCOM War Plan against Southwest Asia (SWA) Shorter-Range Ballistic Missile Threats. This permits early study of multi-layer defense (Patriot-Arrow) technical and operational issues in a Link-16/Joint Range Extension communications architecture in an air and missile defense environment, incorporating the Aegis SPY-1 Radar. The evaluation of Arrow and Patriot provides risk reduction for US multi-layer (Patriot-THAAD) CONOPS and technical issues.</li> <li>IMD WG - System Engineering-Simulation - Supports MDA Development Testing of BMDS Block 04/06 capabilities. This effort also funds COCOM development of BMDS Block 04 procedures/training.</li> <li>IMD WG - Planning Exercise - Supports MDA Development testing of the Command and Control, Battle Management and Communications (C2BMC) element. Also supports COCOM planning for BMDS Block 04 and staff training for BMDS mission and utilization of C2BMC against Northeast Asia (NEA) threats. This exercise also supports an evaluation of C2BMC technical and operational interoperability.</li> <li>IMD WG - BMDS Exercise - Supports COCOM mission rehearsal / certification/ training in BMDS Block 04, for NEA potential threats.</li> <li>IMD WG - Senior Leader Seminar - Review of results, accomplishments, lessons learned, and action items from the above described events.</li> </ul> </li> </ul>				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>February 2005</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b>			<b>R-1 NOMENCLATURE</b>	
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>			<b>0603889C Ballistic Missile Defense Products</b>	
	FY 2004	FY 2005	FY 2006	FY 2007
Concepts, Plans And Experiments	780	78	0	0
RDT&E Articles (Quantity)	0	0	0	0
<p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>Developed operational concepts and studies to prepare for future BMDS Block deployments extending from FY06 to FY11, resulting in improved planning and concept development processes for MDA future Block capabilities.</li> </ul> <p>FY 2005 Planned Accomplishments:</p> <ul style="list-style-type: none"> <li>Continue development of operational concepts and studies for emerging BMDS capabilities.</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
GCC Support	205	20	0	0
RDT&E Articles (Quantity)	0	0	0	0
<p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>Ensured that all affected COCOMs participated in MDA activities related to their preparation for, employment of, and sustainment of the emergent BMDS capabilities.</li> </ul> <p>FY 2005 Planned Accomplishments:</p> <ul style="list-style-type: none"> <li>Continue to enable COCOM participation in MDA activities related to deploying and employing the BMDS.</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
BMDS Training	3,373	337	0	0
RDT&E Articles (Quantity)	0	0	0	0
<p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>Conducted BMDS training for applicable COCOM, OSD and National Capital Region staffs to facilitate planning, integration and deployment of the BMDS.</li> <li>Developed training courses and initial training materials for all levels of the BMDS in preparation for initial capability deployment.</li> <li>Developed the initial BMDS Joint training organizational architecture.</li> <li>Initiated a preliminary Distributed, Multi-Echelon Training System (DMETS) capability allowing the BMDS to conduct coordinated training, wargaming and operational tasking between key locations.</li> </ul>				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>	
FY 2005 Planned Accomplishments:				
<ul style="list-style-type: none"> <li>Continue Training and Education Program development (DMETS, BMDS special training/education).</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
BMDS Logistics	470	47	0	0
RDT&E Articles (Quantity)	0	0	0	0
FY 2004 Accomplishments:				
<ul style="list-style-type: none"> <li>Developed BMDS logistic support polices, procedures and Inter Service Support Agreements to enable fielding and sustainment of the initial BMDS.</li> <li>Developed the BMDS Block 04 Activation Plan to guide COCOM and Service logistical readiness for the initial BMDS capability.</li> </ul>				
FY 2005 Planned Accomplishments:				
<ul style="list-style-type: none"> <li>Continue to develop BMDS Logistics Policies, Plans and Procedures and support capabilities.</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
Sustainment - MOC Operations	1,605	2,710	0	0
RDT&E Articles (Quantity)	0	0	0	0
Facilitates communications between the MDA and operational activities, to maintain situational awareness on the status of the BMDS, to coordinate, when necessary, the activities required to return it to a specified status, and to ensure the safe and reliable operation of the BMDS.				
FY 2004 Accomplishments:				
<ul style="list-style-type: none"> <li>Staffed and activated the MDA Operation Center (MOC).</li> <li>Enabled BMDS situational awareness and allowed MDA to monitor and influence the development/deployment of the BMDS, in accordance with national goals.</li> </ul>				
FY 2005 Planned Accomplishments:				
<ul style="list-style-type: none"> <li>Continue operations through FY05; Incorporate Operation Center equipment upgrades.</li> </ul>				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
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PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
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PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
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Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date <b>February 2005</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>
<p><b><u>D. Acquisition Strategy</u></b></p> <p>Joint Warfighter Support will continue to follow the MDA's capability-based acquisition strategy that emphasizes assessment, spiral-development testing and evolutionary acquisition through the definition of two-year capability blocks. JWSP will accomplish this through development and vetting of Operational Concepts through the Joint Theater Air and Missile Defense Office, the Combatant Commanders and the Services utilizing seminars, workshops, table tops, wargames and exercises, which also supports USSTRATCOM's Military Utility Assessment.</p>		

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
I. Product Development    Cost ( \$ in Thousands )										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Exercises And Wargames										
IMD WG - JUNIPER COBRA	CPAF	JNIC/PEO AMSD/ Denver CO/Huntsville AL	0	1,404	2Q	0	N/A	0	N/A	1,404
IMD WG - System Engineering - Simulation	CPAF	JNIC/GM BOEING/PEO ASMD/ Denver CO/Huntsville AL	0	4,653	3Q	0	N/A	0	N/A	4,653
IMD WG - PLANEX	CPAF	JNIC/ Denver CO	0	1,400	3Q	0	N/A	0	N/A	1,400
IMD WG - BMDS Exercise	CPAF	JNIC/GMBOEIN G/PEOASMD/ Denver CO/Huntsville AL	0	5,672	3Q	0	N/A	0	N/A	5,672
IMD WG - Senior Leader Seminar	CPAF	JNIC/ Denver CO	0	457	3Q	0	N/A	0	N/A	457
Technical Support	CPAF	SPARTA/ Arlington, VA	6,495	7,355	1Q	0	N/A	0	N/A	13,850
Exercise Travel			427	45	1/4Q	0	N/A	0	N/A	472
FY04 Exercises and Wargames	Various	Various	19,393	0	N/A	0	N/A	0	N/A	19,393
Concepts, Plans And Experiments										
Concept of Operations Studies	MIPR	Various	780	78	N/A	0	N/A	0	N/A	858
Gcc Support										
Travel and Shipping Support For GCCs	MIPR	Various	205	20	N/A	0	N/A	0	N/A	225

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
BMDS Training										
Preliminary Distributed Multi-Echelon Training System Study	CPAF	JNIC	637	50	N/A	0	N/A	0	N/A	687
Initial BMDS Training Development	Various	Various	2,736	287	N/A	0	N/A	0	N/A	3,023
BMDS Logistics										
Develop Initial BMDS Logistics Support Policies	Various	Various	400	24	N/A	0	N/A	0	N/A	424
Develop BMDS Block Activation Plan	CPAF	JNIC	70	23	N/A	0	N/A	0	N/A	93
Sustainment & Operations - Moc										
Sustainment – MOC Operations			55	823	1Q	0	N/A	0	N/A	878
Technical Support	CPAF	SPARTA/ Rosslyn, VA	1,550	1,887	1Q	0	N/A	0	N/A	3,437
Subtotal Product Development			32,748	24,178		0		0		56,926
Remarks										
Prior year costs for exercises and wargames do not track back to the specific exercises and wargames conducted in FY05. Some exercises are conducted every other year (either in odd years or even years). Other exercises and wargames, although conducted annually, have different designators, and therefore have no follow-on cost for that particular exercise. In addition, Project 0703 only covers those exercises that occur or affect Block 2004 (FY04-05). Later efforts are detailed in subsequent Block Project budget exhibits (FY06-07 are in Project 0803; FY08-09 are in Project 0903; and FY 10-11 are in Project 0003).										
MDA Operations Center (MOC) efforts in FY04 consisted of developing concepts of operation, acquiring initial computer and communications equipment requirements and less than one quarter of actual operations. Full time operations, once started at the end of FY04, will continue in FY05 and beyond.										

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>					
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 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 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 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 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost			32,748	24,178		0		0		56,926
<b>Remarks</b>										



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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																				Date February 2005																
APPROPRIATION/BUDGET ACTIVITY															R-1 NOMENCLATURE																					
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)															0603889C Ballistic Missile Defense Products																					
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011							
	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				
BLOCK 2004																																				
IDO and Fielding of Block 04																																				
Terminal Fury (TF) 04																																				
GMD Training Phase II Begins																																				
RSOI 04																																				
Military Utility Assessment (MUA) V1																																				
Joint Project Optic Windmill 2004																																				
Eagle Resolve (ER) 04																																				
FY 04 WG Series																																				
Military Utility Assessment (MUA) V2																																				
MDA Operation Center (MOC)																																				
Ulchi Focus Lens (UFL 04)																																				
IMD WG - Juniper Cobra																																				
IMD WG - System Engineering Simulation																																				
IMD WG - Planning Exercise																																				
IMD WG - BMDS Exercise																																				
IMD WG - Senior Leader Seminar																																				

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
BLOCK 2004								
IDO and Fielding of Block 04	1Q-4Q							
Terminal Fury (TF) 04	1Q							
GMD Training Phase II Begins	2Q							
RSOI 04	2Q							
Military Utility Assessment (MUA) VI	3Q							
Joint Project Optic Windmill 2004	3Q							
Eagle Resolve (ER) 04	3Q							
FY 04 WG Series	3Q-4Q							
Military Utility Assessment (MUA) V2	4Q							
MDA Operation Center (MOC)	4Q							
Ulchi Focus Lens (UFL 04)	4Q							
IMD WG - Juniper Cobra		3Q						
IMD WG - System Engineering Simulation		3Q						
IMD WG - Planning Exercise		3Q						
IMD WG - BMDS Exercise		3Q						
IMD WG - Senior Leader Seminar		4Q						

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603889C Ballistic Missile Defense Products</b>				
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0803 Joint Warfighter Support Block 2006	0	0	56,518	66,047	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0	0
<p><i>Note:</i>  <i>Starting in FY 2004, funding for this effort has been allocated across Ballistic Missile Defense Products PE 0603889C in two-year capability Blocks under Project 0703 (FY 2004-2005), Project 0803 (FY 2006-2007), Project 0903 (FY 2008-2009) and Project 0003 (FY 2010-2011).</i></p>								
<p><b><u>A. Mission Description and Budget Item Justification</u></b></p> <p>As part of the total BMDS, The Joint Warfighter Support Program (JWSP) element, a component of the Ballistic Missile Defense Products PE, enables and supports the BMDS as it is developed, initially deployed and upgraded in Block increments. The JWSP enables MDA to work collaboratively with the Joint Warfighters in defining, testing, and deploying/employing the various BMDS Block capabilities.</p> <p>The JWSP consists of six primary activities:</p> <ul style="list-style-type: none"> <li>• Conducting Exercises and Wargames for mission training, qualification, certification and rehearsal of the Combatant Commanders (COCOMs) and refining development of the BMDS. This program focuses on integrating the Geographic COCOMs exercises into a Global Missile defense construct known as the Integrated Missile Defense War Game (IMD WG) series. The IMD WG series address the full spectrum of the short, medium, and long range ballistic missile threat, from launch to impact, and involves the integrated planning and execution of all participating COCOMs. with the goal of improving performance and validating BMDS capabilities. The exercises and wargames also enable MDA system engineering development and BMD system level interoperability testing.</li> <li>• Additionally, the exercises and wargames create the conditions for continued international participation in selected MDA activities and projects Developing and maintaining Training and Education programs, and Resource Programming policies between MDA and the Joint Warfighters and Services. These efforts have the long range goals to developing a distributed, interactive training and wargaming capability across the BMDS; developing BMDS education capabilities within the Service Schools, and conducting training and education for selected BMDS staffs and organizations on emerging BMDS Block deployment capabilities.</li> <li>• Producing Concepts, Plans and Experiments that look at evolving BMDS capabilities and their impact on the Joint Warfighter's employment of the BMDS. The results enable development of operational concepts and provide warfighter feedback to developers for incorporation in future Blocks.</li> <li>• Creating, developing and coordinating of BMDS-wide Integrated Logistics Support policies and procedures. These activities ensure that the requisite logistic support policies and procedures will be in place to sustain the deployed BMDS Block capabilities. This effort develops transition plans considering doctrine, organization, training, martial, leadership, personnel, facilities (DOTMLPF) and funding to improve planning and predictability for the Military departments and Combatant Commanders. The plans include not only historical precedent, but also a forward look regarding what Services and Combatant Commands may be getting, when they will be getting, and support responsibilities.</li> <li>• Supporting the Geographical Combatant Commanders (GCCs). This activity enables COCOM participation in MDA activities, such as wargames, exercise, table tops, and conferences. COCOM involvement insures that MDA and Joint Warfighter continue to work together to define, field, and make operational the initial BMDS capability and subsequent new Block capabilities.</li> <li>• Sustainment &amp; Operations: The MDA Operations Center (MOC). This activity to facilitate enables communications between the MDA and operational activities, to maintain situational awareness on the status of the BMDS, to coordinate, when necessary, the activities required to return it to a specified status, and to ensure the safe and reliable operation of the BMDS. In this role the MOC serves as the central communications node for BMDS operations, situational monitoring, and information collection in support of the Combatant Commanders' missions to conduct missile defense.</li> </ul>								

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>	
<b>B. Accomplishments/Planned Program</b>				
	FY 2004	FY 2005	FY 2006	FY 2007
Exercises And Wargames	0	0	31,839	38,207
RDT&E Articles (Quantity)	0	0	0	0
<p>FY 2004 and 2005 addressed in Project 0703.</p> <p>FY 2006 Planned Program:</p> <p>FY 2006 efforts will focus on an increased level of integration of regional missile defense exercises into the Integrated Missile Defense War Game (IMD/WG) construct. In FY06, the following recurring events (either annual or bi-annual) will be conducted with specific objectives tailored to MDA developmental and interoperability testing and the COCOMs operational and training needs:</p> <ul style="list-style-type: none"> <li>• Integrated Missile Defense War Game - IMD WG in five planned increments: <ul style="list-style-type: none"> <li>• IMD WG - Exercise Joint Project Optic Windmill. A combined-joint EUCOM missile defense exercise employing live forces and simulation to investigate interoperability and integration procedures/issues/technologies in addressing the short to medium range ballistic missile threat from South-West Asia (SWA). The exercise involves participation of live U.S., German, Dutch, and Greek PATRIOT forces, live Aegis and Aegis-like allied ship based systems, and live or simulated representations of emerging MDA BMD Block 06/08 capabilities. Permits study of multi- system technical and operational issues in a Link-16/Joint Range Extension communications architecture in an air and missile defense environment, incorporating added elements and BMDS capability for Block 06.</li> <li>• IMD WG - System Engineering - Simulations. Supports annual MDA Development Testing of BMDS Block 06/08 capabilities. Supports COCOM development of BMDS procedures/training.</li> <li>• IMD WG - Planning Exercise. Supports MDA Development testing of Block 06 Command and Control, Battle Management and Communications (C2BMC). Also supports COCOM Joint Operational Planning and Execution System (JOPES) planning for BMDS Blocks and staff training for BMDS mission and utilization of C2BMC against NorthEast Asia (NEA) threats. These exercises also support evaluation of C2BMC technical and operational interoperability.</li> <li>• IMD WG - BMDS Exercise. Supports COCOM mission rehearsal / certification / training in Block 06 BMDS, for NEA potential threats.</li> <li>• IMD WG - Senior Leader Seminar. Review of results, accomplishments, lessons learned, and action items from annual WG events.</li> </ul> </li> <li>• PACOM Exercise set - a tailored combination of Ulchi Focus Lens / Rapid Thunder/RSOI, Terminal Fury, KEEN Edge exercises - Supports COCOM planning/staff training for BMDS against NEA Threat. Planning portions of exercises to be integrated into IMD WG Series.</li> <li>• Exercise Eagle Resolve - Maintains MDA influence with Geographic COCOM (GCC) for utilization of BMDS versus SWA BM threat.</li> </ul> <p>FY 2007 Planned Program:</p> <p>FY07 efforts will focus on completing the integration of regional missile defense exercises into the Integrated Missile Defense War Game construct. In FY07, the following recurring events (either annual or bi-annual) will be conducted with specific objectives tailored to MDA developmental and interoperability testing and the COCOMs operational and training needs:</p> <ul style="list-style-type: none"> <li>• Integrated Missile Defense War Game - Fiscal Year IMD WG in five planned increments: <ul style="list-style-type: none"> <li>• IMD WG - Exercise Juniper Cobra. A combined-joint EUCOM missile defense exercise employing live forces and simulation to investigate interoperability and integration procedures/issues/technologies in addressing the ballistic missile threat from South-West Asia (SWA). The exercise involves participation of live U.S. and host nation forces, in a multi-layered/Link 16/JRE environment. It also permits study of multi- system technical and operational issues for Block 06/08 capabilities.</li> <li>• IMD WG - System Engineering - Simulations. Supports annual MDA Development Testing of BMDS Block 06/08 capabilities. Supports COCOM development of BMDS procedures/training.</li> </ul> </li> </ul>				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date February 2005	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products		
<ul style="list-style-type: none"><li>IMD WG - Planning Exercise. Supports MDA Development testing of Block 06 Command and Control, Battle Management and Communications (C2BMC). Also supports COCOM Joint Operational Planning and Execution System (JOPES) planning for BMDS Blocks and staff training for BMDS mission and utilization of C2BMC against NorthEast Asia (NEA) threats. These exercises also support evaluation of C2BMC technical and operational interoperability.</li><li>IMD WG - BMDS Exercise. Supports COCOM mission rehearsal / certification / training in Block 06 BMDS, for NEA potential threats.</li><li>IMD WG - Senior Leader Seminar. Review of results, accomplishments, lessons learned, and action items from annual WG events.</li><li>PACOM Exercise set - a tailored combination of Ulchi Focus Lens / Rapid Thunder/RSOI, Terminal Fury, KEEN Edge exercises - Supports COCOM planning/staff training for BMDS against NEA Threat. Planning portions of exercises to be integrated into IMD WG.</li><li>Exercise Roving Sands - Supports BMDS/C2BMC interoperability. Supports refinement of BMDS operational and interoperability study. Supports study of BMDS Block 06/08 capabilities/issues.</li><li>Exercise Eagle Resolve - Maintains MDA influence with Geographic COCOM (GCC) for utilization of BMDS versus SWA BM threat.</li></ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
Concepts, Plans And Experiments	0	0	1,773	1,805
RDT&E Articles (Quantity)	0	0	0	0
FY 2004 and 2005 addressed in Project 0703.				
FY 2006 Planned Program:				
<ul style="list-style-type: none"><li>BMDS Table Top Exercises- Supports Warfighter and MDA understanding of the systems and capabilities included in each new Block upgrade.</li><li>Studies and Analyses - Studies and analyzes emergent BMDS technology impacts on Joint Warfighter requirements for Block 06/08 development efforts.</li></ul>				
FY 2007 Planned Program:				
<ul style="list-style-type: none"><li>BMDS Table Top Exercises - Supports Warfighter and Developer understanding of the systems and capabilities included in each new BMDS system Block upgrade.</li><li>Studies and Analyses - Studies and analyzes emergent BMDS technology impacts on Joint Warfighter requirements to aid/inform Block 08/10/12 development efforts.</li></ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
Gcc Support	0	0	2,764	2,947
RDT&E Articles (Quantity)	0	0	0	0
FY 2004 and 2005 addressed in Project 0703.				
FY 2006 Planned Program:				
<ul style="list-style-type: none"><li>Continues COCOM participation in MDA activities, such as wargames, exercises, table tops, and conferences.</li></ul>				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>February 2005</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>R-1 NOMENCLATURE</b>		
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603889C Ballistic Missile Defense Products</b>		
FY 2007 Planned Program:				
<ul style="list-style-type: none"> <li>Continues COCOM participation in MDA activities, such as wargames, exercises, table tops, and conferences.</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
BMDS Training	0	0	13,882	16,673
RDT&E Articles (Quantity)	0	0	0	0
FY 2004 and 2005 addressed in Project 0703.				
FY 2006 Planned Program:				
<ul style="list-style-type: none"> <li>Continue development of BMDS Training Center at JNIC to support TR/MDA Training/Education Program.</li> <li>Continue the BMDS Training and Education Program (BTEP) to develop topics related to employment of newly emerging BMDS capabilities.</li> <li>Deliver tailored BMDS training to selected Joint Warfighting audiences.</li> <li>Continue evolution of DMETS architecture to incorporate new BMDS capabilities.</li> <li>Training Transition to the Services - Continue efforts to institutionally embed BMDS education in Service/Joint schools and Professional Military Education institutions.</li> <li>Worldwide Missile Training and Education Conference - Develops policy and strategy updates for the BMDS.</li> </ul>				
FY 2007 Planned Program:				
<ul style="list-style-type: none"> <li>Continue development of BMDS Training Center.</li> <li>Continue the BMDS Training and Education Program (BTEP), to develop training modules related to employment of new BMDS capabilities.</li> <li>Present tailored BMDS training to selected Joint Warfighting audiences.</li> <li>Distributed Multi-Echelon Training System (DMETS) - Continue incorporation of new Engagement Sequence Groups into DMETS architecture .</li> <li>Continue Training Transition to the Services.</li> <li>Conduct Worldwide Missile Training and Education Conference - Develops policy and strategy updates for the BMDS.</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
BMDS Logistics	0	0	1,687	1,718
RDT&E Articles (Quantity)	0	0	0	0
FY 2004 and 2005 addressed in Project 0703.				
FY 2006 Planned Program: BMDS-wide sustainment/Integrated Logistics Support (ILS) planning and Block contingency-deployment planning.				
<ul style="list-style-type: none"> <li>Conduct logistics exercises with the Services and COCOMs to help develop evolving BMDS Block sustainment policies, directives and procedural information.</li> <li>Conduct the annual Integrated Logistics Support Management Team (ILSMT) Conference.</li> </ul>				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>February 2005</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>R-1 NOMENCLATURE</b>		
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603889C Ballistic Missile Defense Products</b>		
<ul style="list-style-type: none"> <li>Update and revise the BMDS Handbook.</li> <li>Update BMDS Logistics Training curriculum and related materials.</li> </ul> <p>FY 2007 Planned Program:</p> <ul style="list-style-type: none"> <li>Conduct BMDS-wide sustainment/ILS planning and Block contingency-deployment planning.</li> <li>Conduct Logistics Exercises with the Services and COCOMs to help develop evolving BMDS Block sustainment policies, directives and procedural information.</li> <li>Conduct the annual Integrated Logistics Support Management Team (ILSMT) Conference.</li> <li>Update and revise the BMDS Handbook.</li> </ul>				
	FY 2004	FY 2005	FY 2006	FY 2007
Sustainment - & Operations - MOC	0	0	4,573	4,697
RDT&E Articles (Quantity)	0	0	0	0
<p>FY 2004 and 2005 addressed in Project 0703.</p> <p>FY 2006 Planned Program:</p> <ul style="list-style-type: none"> <li>Continue operations with appropriate MOC equipment upgrades.</li> </ul> <p>FY 2007 Planned Program:</p> <ul style="list-style-type: none"> <li>Continue operations with appropriate MOC equipment upgrades.</li> </ul>				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754



Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date <b>February 2005</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>
<p><b><u>D. Acquisition Strategy</u></b></p> <p>Joint Warfighter Support will continue to follow the MDA's capability-based acquisition strategy that emphasizes assessment, spiral-development testing and evolutionary acquisition through the definition of two-year capability blocks. The JWSP accomplish this through development and vetting of Operational Concepts through the Joint Theater Air and Missile Defense Office, the Combatant Commanders and the Services utilizing seminars, workshops, table tops, wargames and exercises, which also support Military Utility Assessment.</p>		

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
I. Product Development    Cost ( \$ in Thousands )										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Exercises And Wargames										
IMD WG - Joint Project Optic Windmill	CPAF	JNIC/PEO AMSD/ Denver CO/Huntsville AL	0	0	N/A	3,895	2Q	0	N/A	3,895
IMD WG - System Engineering Simulation	CPAF	JNIC/GM BOEING/PEO ASMD/ Denver CO/Huntsville AL	0	0	N/A	5,614	2Q	0	N/A	5,614
IMD WG - Planning Exercise	CPAF	JNIC/ Denver CO	0	0	N/A	1,677	2Q	0	N/A	1,677
IMD WG - BMDS Exercise	CPAF	JNIC/GM BOEING/PEO ASMD/ Denver CO/Huntsville AL	0	0	N/A	6,798	2Q	0	N/A	6,798
IMD WG - Senior Leader	CPAF	JNIC/ Denver CO	0	0	N/A	187	2Q	0	N/A	187
PACOM Exercise Set	CPAF	JNIC/ Denver CO	0	0	N/A	2,987	2Q	7,275	2Q	10,262
Exercise EAGLE RESOLVE 2006/2007	Various	JNIC/ CENTCOM/ Denver CO	0	0	N/A	218	2Q	222	2Q	440
Exercise ROVING SANDS 2007	CPAF	JNIC/ Denver CO	0	0	N/A	0	N/A	1,786	2Q	1,786
Technical Support	CPAF	JNIC/ Denver CO	0	0	N/A	10,463	1Q	11,174	1Q	21,637

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)						R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
IMD WG - JUNIPER COBRA	CPAF	JNIC/PEO AMSD/ Denver CO	0	0	N/A	0	N/A	2,554	2Q	2,554
IMD WG - System Engineering - Simulation	CPAF	JNIC/GMD BOEING/PEO ASMD/ Denver CO	0	0	N/A	0	N/A	5,975	2Q	5,975
IMD WG - PLANEX	CPAF	JNIC/ Denver CO	0	0	N/A	0	N/A	1,785	2Q	1,785
IMD WG - BMDS Exercise	CPAF	JNIC/ Denver CO	0	0	N/A	0	N/A	7,235	2Q	7,235
IMD WG - Senior Leader Seminar	CPAF	JNIC/ Denver CO	0	0	N/A	0	N/A	201	2Q	201
Concepts, Plans And Experiments										
BMDS Table Top	MIPR	Various	0	0	N/A	473	1Q	482	1Q	955
Studies & Analysis	MIPR	Various	0	0	N/A	1,300	1Q	1,323	1Q	2,623
GCC Support										
USSTRATCOM	MIPR	USSTRATCOM/ San Diego ,CA	0	0	N/A	88	1Q	105	1Q	193
EUCOM	MIPR	THAAD/ Huntsville, AL	0	0	N/A	50	1Q	65	1Q	115
USPACOM	MIPR	USPACOM/ Germany	0	0	N/A	88	1Q	105	1Q	193
USCENTCOM	MIPR	USCENTCOM/ Tampa, FL	0	0	N/A	88	1Q	105	1Q	193
USNORTHCOM	MIPR	USNORTHCOM Colorado Springs, CO	0	0	N/A	50	1Q	65	1Q	115
USFK	MIPR	USFK/ Korea	0	0	N/A	156	1Q	190	1Q	346

Project: 0803 Joint Warfighter Support Block 2006

MDA Exhibit R-3 (PE 0603889C)

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Technical Support	CPIF	MDA/ Arlington, VA	0	0	N/A	2,244	1/4Q	2,312	1/4Q	4,556
BMDS Training										
BMDS Training Center	CPAF	JNIC/ Denver, CO	0	0	N/A	3,275	1Q	3,705	1Q	6,980
DMETS	CPAF	JNIC/ Denver, CO	0	0	N/A	7,277	1Q	7,410	1Q	14,687
Studies & Analyses	CPAF	SPARTA/ Arlington, VA	0	0	N/A	508	1Q	517	1Q	1,025
Transition to Services	CPAF	MDA/ Arlington, VA	0	0	N/A	2,822	1Q	5,041	1Q	7,863
BMDS Logistics										
BMDS Logistics	CPAF	JNIC/ Denver, CO	0	0	N/A	1,687	1Q	1,718	1Q	3,405
Sustainment - & Operations - MOC										
MOC Operations	Various		0	0	N/A	1,653	1Q	1,579	1Q	3,232
Technical Support	CPAF	SPARTA/ Rosslyn, VA	0	0	N/A	2,920	1Q	3,118	1Q	6,038
Subtotal Product Development			0	0		56,518		66,047		122,565
Remarks										
Prior year costs (FY 2004-2005) are discussed in Project 0703.										

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</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>0603889C Ballistic Missile Defense Products</b>					
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 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 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 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 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost			0	0		56,518		66,047		122,565
<b>Remarks</b>										

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																				Date February 2005																
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)															R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products																					
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011							
	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				
BLOCK 2006																																				
IMD WG - Joint Project Optic Windmill											Δ																									
IMD WG - System Engineering Simulation											Δ																									
PACOM Exercise Set												Δ																								
Eagle Resolve 2006												Δ	Δ																							
IMD WG - Planning Exercise													Δ																							
IMD WG - BMDS Exercise													Δ																							
IMD WG - Senior Leader Seminar													Δ																							
IMD WG - Juniper Cobra 2007														Δ																						
Joint Project Optic Windmill												Δ																								
Roving Sands 2007															Δ																					
Eagle Resolve 2007															Δ																					
PACOM Exercise Set 2007															Δ	Δ																				
IMD WG - System Engineering Simulation 2007																	Δ																			
IMD WG - Senior Leader Seminar 2007																	Δ																			
IMD WG - BMDS Exercise 2007																	Δ																			
IMD WG - Planning Exercise 2007																	Δ																			

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail					Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
BLOCK 2006								
IMD WG - Joint Project Optic Windmill			2Q					
IMD WG - System Engineering Simulation			2Q					
PACOM Exercise Set			3Q					
Eagle Resolve 2006			3Q-4Q					
IMD WG - Planning Exercise			4Q					
IMD WG - BMDS Exercise			4Q					
IMD WG - Senior Leader Seminar			4Q					
IMD WG - Juniper Cobra 2007				2Q				
Joint Project Optic Windmill			3Q					
Roving Sands 2007				3Q				
Eagle Resolve 2007				3Q				
PACOM Exercise Set 2007				3Q-4Q				
IMD WG - System Engineering Simulation 2007				4Q				
IMD WG - Senior Leader Seminar 2007				4Q				
IMD WG - BMDS Exercise 2007				4Q				
IMD WG - Planning Exercise 2007				4Q				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>			
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>			
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0903 Joint Warfighter Support Block 2008	0	0	0	0	61,571	62,774	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0	0

*Note:*  
*Starting in FY 2004, funding for this effort has been allocated across Ballistic Missile Defense Products PE 0603889C in two-year capability Blocks under Project 0703 (FY 2004-2005), Project 0803 (FY 2006-2007), Project 0903 (FY 2008-2009) and Project 0003 (FY 2010-2011).*

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

As part of the total BMDS, The Joint Warfighter Support Program (JWSP) element, a component of the Ballistic Missile Defense Products PE, enables and supports the BMDS as it is developed, initially deployed and upgraded in Block increments. The JWSP enables MDA to work collaboratively with the Joint Warfighters in defining, testing, and deploying/employing the various BMDS Block capabilities. The JWSP consists of six primary activities:

- Conducting Exercises and Wargames for mission training, qualification, certification and rehearsal of the Combatant Commanders (COCOMs) and refining development of the BMDS. This program focuses on integrating the Geographic COCOMs exercises into a Global Missile defense construct known as the Integrated Missile Defense War Game (IMD/WG) series. The IMD/WG series address the full spectrum of the short, medium, and long range ballistic missile threat, from launch to impact, and involves the integrated planning and execution of all participating COCOMs. with the goal of improving performance and validating BMDS capabilities. The exercises and wargames also enable MDA system engineering development and BMD system level interoperability testing. Additionally, the exercises and wargames create the conditions for continued international participation in selected MDA activities and projects
- Developing and maintaining Training and Education programs, and Resource Programming policies between MDA and the Joint Warfighters and Services. These efforts have the long range goals to developing a distributed, interactive training and wargaming capability across the BMDS; developing BMDS education capabilities within the Service Schools, and conducting training and education for selected BMDS staffs and organizations on emerging BMDS Block deployment capabilities.
- Producing Concepts, Plans and Experiments that look at evolving BMDS capabilities and their impact on the Joint Warfighter's employment of the BMDS. The results enable development of operational concepts and provide warfighter feedback to developers for incorporation in future Blocks.
- Creating, developing and coordinating of BMDS-wide Integrated Logistics Support policies and procedures. These activities ensure that the requisite logistic support policies and procedures will be in place to sustain the deployed BMDS Block capabilities. This effort develops transition plans considering doctrine, organization, training, martial, leadership, personnel, facilities (DOTMLPF) and funding to improve planning and predictability for the Military departments and Combatant Commanders. The plans include not only historical precedent, but also a forward look regarding what Services and Combatant Commands may be getting, when they will be getting, and support responsibilities.
- Geographical Combatant Commander (GCC) Support. This activity enables COCOM participation in MDA activities, such as wargames, exercise, table tops, and conferences. COCOM involvement insures that MDA and Joint Warfighter continue to work together to define, field, and make operational the initial BMDS capability and subsequent new Block capabilities.
- Sustainment and Operation Support. Supporting the MDA Operations Center (MOC). The MOC enables communications between the MDA and operational activities, to maintain situational awareness on the status of the BMDS, to coordinate, when necessary, the activities required to return it to a specified status, and to ensure the safe and reliable operation of the BMDS. In this role the MOC serves as the central communications node for BMDS operations, situational monitoring, and information collection in support of the Combatant Commanders' missions to conduct missile defense.



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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
B. Accomplishments/Planned Program									
	FY 2004		FY 2005		FY 2006		FY 2007		
Funding in this Project is not programmed until FY 2008.	0		0		0		0		
RDT&E Articles (Quantity)	0		0		0		0		
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805

Project: 0903 Joint Warfighter Support Block 2008

MDA Exhibit R-2A (PE 0603889C)

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754
<p><b><u>D. Acquisition Strategy</u></b></p> <p>Joint Warfighter Support will continue to follow the MDA's capability-based acquisition strategy that emphasizes assessment, spiral-development testing and evolutionary acquisition through the definition of two-year capability blocks. JWSP will accomplish this through development and vetting of Operational Concepts through JTAMDO, the Combatant Commanders and the Services utilizing seminars, workshops, table tops, wargames and exercises, which also support the Military Utility Assessment.</p>									

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2005															
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)																	R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products															
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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				
BLOCK 2008																																
Regional Combatant Commanders Exercises																	Δ							Δ								
Eagle Resolve 2009																				Δ												
IMD WG - BMDS Exercise																			Δ													
IMD WG - BMDS Exercise 2009																							Δ									
IMD WG - Battle Planning Exercise																			Δ													
IMD WG - Battle Planning Exercise 2009																								Δ								
IMD WG - Joint Project Optic Windmill																		Δ														
IMD WG - Juniper Cobra																						Δ										
IMD WG - Planning Exercise																									Δ							
IMD WG - System Engineering Simulation																				Δ												
IMD WG - System Engineering Simulation 2009																				Δ												
PACOM Exercise Set																				Δ	Δ				Δ	Δ						
Roving Sands 2009																								Δ								

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
BLOCK 2008								
Regional Combatant Commanders Exercises					1Q-4Q	1Q-4Q		
Eagle Resolve 2009						3Q		
IMD WG - BMDS Exercise					4Q			
IMD WG - BMDS Exercise 2009						4Q		
IMD WG - Battle Planning Exercise					4Q			
IMD WG - Battle Planning Exercise 2009						4Q		
IMD WG - Joint Project Optic Windmill					2Q			
IMD WG - Juniper Cobra						2Q		
IMD WG - Planning Exercise						4Q		
IMD WG - System Engineering Simulation					3Q			
IMD WG - System Engineering Simulation 2009					3Q			
PACOM Exercise Set					3Q-4Q	3Q-4Q		
Roving Sands 2009						3Q		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>			
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>			
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0003 Joint Warfighter Support Block 2010	0	0	0	0	0	0	64,887	68,564
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

As part of the total BMDS, The Joint Warfighter Support Program (JWSP) element, a component of the Ballistic Missile Defense Products PE, enables and supports the BMDS as it is developed, initially deployed and upgraded in Block increments. The JWSP enables MDA to work collaboratively with the Joint Warfighters in defining, testing, and deploying/employing the various BMDS Block capabilities. The JWSP consists of six primary activities:

- Conducting Exercises and Wargames for mission training, qualification, certification and rehearsal of the Combatant Commanders (COCOMs) and refining development of the BMDS. This program focuses on integrating the Geographic COCOMs exercises into a Global Missile defense construct known as the Integrated Missile Defense War Game (IMD/WG) series. The IMD/WG series address the full spectrum of the short, medium, and long range ballistic missile threat, from launch to impact, and involves the integrated planning and execution of all participating COCOMs. with the goal of improving performance and validating BMDS capabilities. The exercises and wargames also enable MDA system engineering development and BMD system level interoperability testing. Additionally, the exercises and wargames create the conditions for continued international participation in selected MDA activities and projects
- Developing and maintaining Training and Education programs, and Resource Programming policies between MDA and the Joint Warfighters and Services. These efforts have the long range goals to developing a distributed, interactive training and wargaming capability across the BMDS; developing BMDS education capabilities within the Service Schools, and conducting training and education for selected BMDS staffs and organizations on emerging BMDS Block deployment capabilities.
- Producing Concepts, Plans and Experiments that look at evolving BMDS capabilities and their impact on the Joint Warfighter's employment of the BMDS. The results enable development of operational concepts and provide warfighter feedback to developers for incorporation in future Blocks.
- Creating, developing and coordinating of BMDS-wide Integrated Logistics Support policies and procedures. These activities ensure that the requisite logistic support policies and procedures will be in place to sustain the deployed BMDS Block capabilities. This effort develops transition plans considering doctrine, organization, training, martial, leadership, personnel, facilities (DOTMLPF) and funding to improve planning and predictability for the Military departments and Combatant Commanders. The plans include not only historical precedent, but also a forward look regarding what Services and Combatant Commands may be getting, when they will be getting, and support responsibilities.
- Geographical Combatant Commander (GCC) Support. This activity enables COCOM participation in MDA activities, such as wargames, exercise, table tops, and conferences. COCOM involvement insures that MDA and Joint Warfighter continue to work together to define, field, and make operational the initial BMDS capability and subsequent new Block capabilities.
- Sustainment and Operation Support. Supporting the MDA Operations Center (MOC). The MOC enables communications between the MDA and operational activities, to maintain situational awareness on the status of the BMDS, to coordinate, when necessary, the activities required to return it to a specified status, and to ensure the safe and reliable operation of the BMDS. In this role the MOC serves as the central communications node for BMDS operations, situational monitoring, and information collection in support of the Combatant Commanders' missions to conduct missile defense.

**B. Accomplishments/Planned Program**

	FY 2004	FY 2005	FY 2006	FY 2007
Funding in this Project is not programmed until FY 2010.				
RDT&E Articles (Quantity)				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date <b>February 2005</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>
<p><b><u>D. Acquisition Strategy</u></b></p> <p>Joint Warfighter Support will continue to follow the MDA's capability-based acquisition strategy that emphasizes assessment, spiral-development testing and evolutionary acquisition through the definition of two-year capability blocks. JWSP will accomplish this through development and vetting of Operational Concepts through JTAMDO, the Combatant Commanders and the Services utilizing seminars, workshops, table tops, wargames and exercises, which also support the Military Utility Assessment.</p>		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603889C Ballistic Missile Defense Products</b>				
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0204 Joint National Integration Center (JNIC)	53,830	71,367	76,895	80,688	82,661	84,736	85,925	86,581
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

The mission of the JNIC is to develop and operate those portions of the BMDS Test Bed that comprise a robust suite of rapid prototyping and missile defense test and evaluation capabilities, which ensures BMDS elements are acquired and integrated into an interoperable, layered system, while simultaneously supporting warfighter operations of designated BMDS elements. The JNIC maintains a secure facility that includes the computers; communications; networks; flight, ground, and simulation test bed environments; wargaming complex; environmental support; and other fixed cost capabilities essential for the execution of MDA programs. It provides the enabling infrastructure to support both acquisition and warfighter communities.

In executing this mission, the JNIC establishes a core capability for exercising, evaluating, analyzing and refining advanced missile defense concepts that can then be used to improve follow-on blocks to the BMDS. It does this by planning, providing technical support, and executing Operator-in-the-Loop Wargames; Joint Warfighter Exercises and Experiments; Missile Defense Integration Exercises; and Integrated Missile Defense Analyses. These activities allow the developer, tester, and operator to assess capabilities in the same environment. The JNIC facilitates international cooperation and support of the BMDS through the development and execution of missile defense seminars, workshops, wargames, and other multinational activities. It builds and retains a corporate knowledge base comprised of leading technical experts to respond quickly to customer requirements and perform technical MDA missions.

The JNIC also supports the development and provides the enabling infrastructure for several areas. These include the overarching Command and Control, Battle Management, and Communications (C2BMC) element of the BMDS, the Missile Defense Element (MDE) of the Ground-Based Midcourse Defense (GMD) segment of BMDS, the MDA Technical Support Center (MTSC) which provides end-to-end technical reachback expertise to warfighters, and the MDA Intelligence Support Center (ISC) and the 100th Missile Defense Brigade Intelligence Cell (BIC). In addition, for the MTSC, it provides network and security upgrades and process development implementation for integration and fusion of health and status data on both the BMDS test bed and BMDS elements. The JNIC supports the GMD Mission Control Center Facility (MCCF), as well as the USNORTHCOM C2BMC servers, Interim BMDS Operations Center (IBOC), the C2BMC Integration and Test Center (BITC) and the C2BMC Experimentation Laboratories (X-Labs). It provides infrastructure support of the Satellite Tracking and Surveillance System's (STSS) JNIC Satellite Control Facility; the Near Field Infrared Experiment's JNIC Mission Operations Center (JMOC); and developmental support, as directed, of a common satellite ground station and sensor netting test bed for designated BMDS elements. It also plans, conducts, and supports BMDS Engagement Sequence Group testing and analysis with the responsible engineering organization (REO) and responsible test organization (RTO).

The JNIC designs, implements, verifies, operates, maintains and manages secure IT infrastructure and service interfaces, communication circuit connectivity, and tiered service levels. It provides physical security upgrades to protect BMDS capabilities, accommodates the System Security Level protections required per DEPSECDEF guidance dated July 2004, and provides additional labor and diagnostic tools for 24X7 information management, security, and facilities operation and maintenance technical support. This technical support, provided outside normal duty hours, is crucial to warfighter mission critical system outage restoral, coordination, and reporting.



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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>February 2005</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>			R-1 NOMENCLATURE <b>0603889C Ballistic Missile Defense Products</b>	
<b><u>B. Accomplishments/Planned Program</u></b>				
	FY 2004	FY 2005	FY 2006	FY 2007
JNIC Development & Ops	53,830	71,367	76,895	80,688
RDT&E Articles (Quantity)	0	0	0	0
<p>FY 2004 Accomplishments:</p> <ul style="list-style-type: none"> <li>• Supported proof of concept demonstrations with USN Aegis systems in the areas of command and control and radar tracking.</li> <li>• Conducted Integrated Missile Defense wargames to refine Combatant Commander Concepts of Operations and tactics, techniques, and procedures (TTPs).</li> <li>• Tested warfighter communications and tactical message data flows during Missile Defense Integrated Exercises.</li> <li>• Supported demonstration of prototypical intercept boosters and communications during a BMDS integrated flight test.</li> <li>• Established infrastructure enhancements to support warfighter mission critical systems.</li> <li>• Provided enabling infrastructure supporting MDA RDT&amp;E efforts at the JNIC for:                         <ul style="list-style-type: none"> <li>• GMD Mission Control Center Facility (MCCF) build out and support</li> <li>• C2BMC Integration and Test Center (BITC) &amp; C2BMC Experimentation Laboratories (X-Labs)</li> <li>• Satellite Tracking and Surveillance System's (STSS) JNIC Satellite Control Facility (JSCF)</li> <li>• Near Field Infrared Experiment's JNIC Mission Operations Center (JMOC)</li> <li>• Integrated Missile Defense (IMD) Wargame series execution</li> <li>• Combatant Commander exercise support</li> <li>• BMDS system-level flight tests</li> </ul> </li> <li>• Executed System Ground Tests for continued ESG test &amp; assessment</li> <li>• Provided enabling infrastructure supporting BMDS operational capability development for:                         <ul style="list-style-type: none"> <li>• Missile Defense Element (MDE) servers and warfighter data and voice net connections.</li> <li>• C2BMC servers and enterprise work stations.</li> <li>• MDA Technical Support Center (MTSC), BMDS Watch Officer (BWO), BMDS Safety Officer (BSO).</li> <li>• MDA Intelligence Support Cell (ISC) and the 100th Missile Defense Brigade Intelligence Cell (BIC).</li> </ul> </li> </ul> <p>FY 2005 Planned Accomplishments:</p> <ul style="list-style-type: none"> <li>• Support demonstrations with USN Aegis ships to show interactions with BMDS command and control, radar tracking, and intercept capability.</li> <li>• Provide wargame scenarios to enhance understanding of current missile defense capabilities and investigate options for future capabilities.</li> <li>• Conduct Nimble Titan wargame which allows warfighters to employ TTPs to protect the homeland.</li> <li>• Conduct Integrated Missile Defense Distributed Wargames, which involve globally distributed warfighters using equipment in their remote command and control centers.</li> <li>• Conduct Missile Defense Integrated Exercise(s) to assess ESGs and to improve interoperability and integration.</li> <li>• Provide enabling infrastructure supporting MDA RDT&amp;E efforts at the JNIC for:                         <ul style="list-style-type: none"> <li>• GMD Mission Control Center Facility (MCCF)</li> <li>• C2BMC Integration and Test Center (BITC) &amp; C2BMC Experimentation Laboratories (X-Labs)</li> <li>• Satellite Tracking and Surveillance System's (STSS) JNIC Satellite Control Facility (JSCF)</li> <li>• Near Field Infrared Experiment's JNIC Mission Operations Center (JMOC)</li> </ul> </li> </ul>				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>February 2005</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>R-1 NOMENCLATURE</b>
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603889C Ballistic Missile Defense Products</b>
<ul style="list-style-type: none"> <li>• Combatant Commander exercise support</li> <li>• BMDS system-level flight tests</li> <li>• Provide enabling infrastructure supporting BMDS operational capability development for: <ul style="list-style-type: none"> <li>• Missile Defense Element (MDE) servers and warfighter data and voice net connections.</li> <li>• C2BMC servers and enterprise work stations.</li> <li>• MDA Technical Support Center (MTSC), BMDS Watch Officer (BWO), BMDS Safety Officer (BSO).</li> <li>• MDA Intelligence Support Cell (ISC) and the 100th Missile Defense Brigade Intelligence Cell (BIC).</li> </ul> </li> </ul> <p>FY 2006 Planned Program:</p> <ul style="list-style-type: none"> <li>• Support fleet demonstrations to show that deployed Aegis ships are capable of integrating into the BMDS command and control structure, can conduct radar tracking, and possess limited intercept capability.</li> <li>• Create a virtual Pacific War scenario for the Integrated Missile Defense PACOM wargame, to allow PACOM warfighters to investigate options and develop various concepts of operations.</li> <li>• Create a virtual war scenario where warfighters can train using available simulated missile defense capabilities for the Nimble Titan Wargame.</li> <li>• Provide enabling infrastructure supporting MDA RDT&amp;E efforts at the JNIC for: <ul style="list-style-type: none"> <li>• GMD Mission Control Center Facility (MCCF)</li> <li>• C2BMC Integration and Test Center (BITC) &amp; C2BMC Experimentation Laboratories (X-Labs)</li> <li>• Satellite Tracking and Surveillance System's (STSS) JNIC Satellite Control Facility (JSCF)</li> <li>• Near Field Infrared Experiment's JNIC Mission Operations Center (JMOC)</li> <li>• Combatant Commander exercise support</li> <li>• BMDS system-level flight tests</li> <li>• Block 06 sensor integration and test</li> </ul> </li> <li>• Provide enabling infrastructure supporting BMDS operational capability development for: <ul style="list-style-type: none"> <li>• Missile Defense Element (MDE) servers and warfighter data and voice net connections.</li> <li>• C2BMC servers and enterprise work stations.</li> <li>• MDA Technical Support Center (MTSC), BMDS Watch Officer (BWO), BMDS Safety Officer (BSO).</li> <li>• MDA Intelligence Support Cell (ISC) and the 100th Missile Defense Brigade Intelligence Cell (BIC).</li> </ul> </li> <li>• Provide repair, sustainment, and recapitalization of mission critical infrastructure to include data storage, electronic security system, and power and computing upgrades.</li> </ul> <p>FY 2007 Planned Program:</p> <ul style="list-style-type: none"> <li>• Continue to support the integration of capable deployed USN Aegis ships into the BMDS command and control structure.</li> <li>• Create a Eurasian war scenario for an Integrated Missile Defense EUCOM/CENTCOM Wargame that allows EUCOM and CENTCOM warfighters to investigate their options and develop various concepts of operations.</li> <li>• Create a virtual war scenario for the Nimble Titan Wargame which allows warfighters to practice TTPs they would employ during an actual global conflict.</li> <li>• Provide enabling infrastructure supporting MDA RDT&amp;E efforts at the JNIC for: <ul style="list-style-type: none"> <li>• GMD Mission Control Center Facility (MCCF)</li> <li>• C2BMC Integration and Test Center (BITC) &amp; C2BMC Experimentation Laboratories (X-Labs)</li> <li>• Satellite Tracking and Surveillance System's (STSS) JNIC Satellite Control Facility (JSCF)</li> </ul> </li> </ul>		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
<ul style="list-style-type: none"><li>• Near Field Infrared Experiment's JNIC Mission Operations Center (JMOC)</li><li>• Combatant Commander exercise support</li><li>• Support integration of additional deployed sensors during ground and flight test events</li><li>• Execute System Ground Tests for continued ESG test &amp; assessment.</li><li>• Provide enabling infrastructure supporting BMDS operational capability development for:<ul style="list-style-type: none"><li>• Missile Defense Element (MDE) servers and warfighter data and voice net connections.</li><li>• C2BMC servers and enterprise work stations.</li><li>• MDA Technical Support Center (MTSC), BMDS Watch Officer (BWO), BMDS Safety Officer (BSO).</li><li>• MDA Intelligence Support Cell (ISC) and the 100th Missile Defense Brigade Intelligence Cell (BIC).</li></ul></li></ul>									
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
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PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
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PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253

Project: 0204 Joint National Integration Center (JNIC)

MDA Exhibit R-2A (PE 0603889C)

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754
<div>D. Acquisition Strategy</div> <p>The strategy for JNIC mission execution is to employ an integration contract to simultaneously perform all of the BMDS RDT&amp;E tasks with integrated operation and sustainment. The JNIC is operated by missile defense subject matter experts composed of Government military and civilian personnel, Federally Funded Research and Development Center (FFRDC), JNIC Technical Advisory and Assistance Services (JTAAS), and major defense contractors.</p>									

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>I. Product Development Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>JNIC Development &amp; Ops</b>										
JNIC		JNIC/ Colorado Springs, CO	3,494	3,483	1/4Q	3,529	1Q	3,678	1Q	14,184
USN		Naval Research Laboratory/ Colorado Springs, CO	968	1,002	1/4Q	1,036	1Q	1,070	1Q	4,076
JNIC/MDA		JNIC/ Colorado Springs, CO	0	2,938	1/4Q	2,997	1Q	2,997	1Q	8,932
Subtotal Product Development			4,462	7,423		7,562		7,745		27,192
<b>Remarks</b>										
Funds provide government services--manpower.										
<b>II. Support Costs Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>JNIC Development &amp; Ops</b>										
JNIC	MIPR	50 Space Wing/ Schriever AFB, CO	891	1,087	1Q	1,104	1Q	1,124	1Q	4,206
Subtotal Support Costs			891	1,087		1,104		1,124		4,206
<b>Remarks</b>										
These funds are for utilities and base communications as specified in the Interservice Support Agreement with the 50th Space Wing.										

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>								Date <b>February 2005</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 NOMENCLATURE</b>					
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>0603889C Ballistic Missile Defense Products</b>					
<b>III. Test and Evaluation Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>JNIC Development &amp; Ops</b>										
JNIC	C/CPAF	Northrop Grumman Mission Sys./ CO	42,467	56,651	2Q	61,828	2Q	65,303	2Q	226,249
Subtotal Test and Evaluation			42,467	56,651		61,828		65,303		226,249
<b>Remarks</b>										
These funds are executed by the Integration Center Research and Development Contractor.										
Funds include FY 2005 Congressional Add of \$2.5 million for International Missile Defense Events and Activities.										
<b>IV. Management Services Cost ( \$ in Thousands )</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
<b>JNIC Development &amp; Ops</b>										
JNIC	C/FFP	SRS/ Colorado Springs, CO	4,445	4,757	1Q	4,835	1Q	4,922	1Q	18,959
JNIC	C/FFRDC	Mitre Corp/ Colorado Springs, CO	1,565	1,449	1Q	1,566	1Q	1,594	1Q	6,174
Subtotal Management Services			6,010	6,206		6,401		6,516		25,133
<b>Remarks</b>										
These funds provide FFRDC and Technical Advisory and Assistance Services employees, for JNIC operations and oversight of the Integration Center Research and Development Contractor.										
Project Total Cost			53,830	71,367		76,895		80,688		282,780
<b>Remarks</b>										

Project: 0204 Joint National Integration Center (JNIC)

MDA Exhibit R-3 (PE 0603889C)

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																			Date February 2005																					
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)													R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products																											
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011											
	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								
JNIC																																								
Aegis Ballistic Msl Defense Fleet Msl Tests	▲				▲				▲																												▲			
Aegis BMD FTM #6			▲																																					
FTM 04-1						Δ																																		
FTM 04-2							Δ																																	
FTM 04-3								Δ																																
FTM 06-1									Δ																															
FTM 06-1 (FM-10)										Δ																														
FTM 06-2												Δ																												
FTM 06-3															Δ																									
FTM 06-4 (FM-12)																Δ																								
FTM 08-1																	Δ																							
FTM-08-2																		Δ																						
FTM 08-3																						Δ																		
Aegis Critical Measurement Program Tests		▲			▲			▲																				▲												
Arrow Caravan Test			▲		▲																																			
Arrow System Test	▲				▲				▲																▲															
Airborne Laser System Integrated Flight Test Spt								▲	▲																▲															
Nimble Titan Wargame		▲			▲			▲																				▲												
Integrated Missile Defense (IMD) Wargames		▲			▲			▲																				▲												

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

Date

February 2005

APPROPRIATION/BUDGET ACTIVITY

R-1 NOMENCLATURE

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

0603889C Ballistic Missile Defense Products

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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
JNIC																																
IMD 04-1 Battle Planning Exercise		▲																														
IMD 04-1 Command & Control Simulations		▲	▲																													
IMD 04-1 Wargame				▲																												
IMD 05-1 Battle Planning Exercise				▲																												
IMD 05-1 Command & Control Simulations						Δ																										
IMD 05-1 Wargame						Δ																										
IMD 05-2 Battle Planning Exercise								Δ																								
IMD 05-2 Command & Control Simulations						Δ																										
IMD 05-2 Wargame									Δ																							
IMD 06 Battle Planning Exercise							Δ																									
IMD 06 Command & Control Simulations										Δ																						
IMD 06 Wargame												Δ																				
IMD 07 Battle Planning Exercise															Δ																	
IMD 07 Command & Control Simulations														Δ																		
IMD 07 Wargame																Δ																
IMD 08 Battle Planning Exercise																		Δ														
IMD 08 Command & Control Simulations																	Δ															



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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2005															
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)										R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products																						
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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
JNIC																																
IMD 08 Wargame																																
IMD 09 Battle Planning Exercise																																
IMD 09 Command & Control Simulations																																
IMD 09 Wargame																																
Missile Defense Integrated Exercises (MDIE)																																
MDIE 4a																																
MDIE 4b																																
MDIE 5a																																
MDIE 5b																																
MDIE 6a																																
MDIE 6b																																
MDIE 7a																																
MDIE 7b																																
MDIE 8a																																
MDIE 8b																																
MDIE 9a																																
MDIE 9b																																

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

Date

February 2005

## APPROPRIATION/BUDGET ACTIVITY

## R-1 NOMENCLATURE

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

0603889C Ballistic Missile Defense Products

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011												
	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									
JNIC																																									
Multinational Wargame											Δ																	Δ													
Multinational Wargame 06 Battle Planning Exercise											Δ																														
Multinational Wargame 06 Cmd & Control Simulations												Δ																													
Multinational Wargame 06												Δ																													
Multinational Wargame 07 Battle Planning Exercise														Δ																											
Multinational Wargame 07 Cmd & Control Simulations																Δ																									
Multinational Wargame 07																Δ																									
Multinational Wargame 08 Battle Planning Exercise																		Δ																							
Multinational Wargame 08 Cmd & Control Simulations																				Δ																					
Multinational Wargame 08																				Δ																					
Multinational Wargame 09 Battle Planning Exercise																						Δ																			
Multinational Wargame 09 Cmd & Control Simulations																							Δ																		
Multinational Wargame 09																								Δ																	
IFT 13C				▲																																					
IFT14											Δ																														
FTG 04-1																																									
FTG 04-5																																									
FTG 04-2												Δ																													

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																				Date February 2005												
APPROPRIATION/BUDGET ACTIVITY												R-1 NOMENCLATURE																				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)												0603889C Ballistic Missile Defense Products																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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
JNIC																																
FTG 06-2														Δ																		
FTG 06-1 a/b (Salvo Mission)												Δ																				
FTG 06-4															Δ																	
FTG 06-3a/b														Δ																		
FTG 06-5																	Δ															
FT 06-1									Δ											Δ												
FT 04-1 (IFT-16a)						Δ																										
FT 04-4 (CMCM-2)										Δ																						
FT 04-5 (Cobra Dane LRALT)										Δ																						
FT 06-6 (GMD RCF-4)														Δ																		
FT 04-2 (CMCM-1)						Δ																										
FT 04-3 (MRT)						Δ																										
FT 06-4 (CMCM-4)															Δ																	
BMDS System Integrated Flight Tests Tech Suppt	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Execute & Support Core Exercise Capability	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
JNIC								
Aegis Ballistic Msl Defense Fleet Msl Tests	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Aegis BMD FTM #6	3Q							
FTM 04-1		2Q						
FTM 04-2		3Q						
FTM 04-3		4Q						
FTM 06-1			2Q					
FTM 06-1 (FM-10)			2Q					
FTM 06-2			4Q					
FTM 06-3				3Q				
FTM 06-4 (FM-12)				4Q				
FTM 08-1					2Q			
FTM-08-2					4Q			
FTM 08-3						2Q		
Aegis Critical Measurement Program Tests	2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q		
Arrow Caravan Test	3Q-4Q							
Arrow System Test	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q		
Airborne Laser System Integrated Flight Test Spt		4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q		
Nimble Titan Wargame	2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q		
Integrated Missile Defense (IMD) Wargames	2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
IMD 04-1 Battle Planning Exercise	2Q							
IMD 04-1 Command & Control Simulations	2Q,3Q							
IMD 04-1 Wargame	4Q							
IMD 05-1 Battle Planning Exercise	4Q							
IMD 05-1 Command & Control Simulations		2Q						
IMD 05-1 Wargame		2Q						
IMD 05-2 Battle Planning Exercise		4Q						
IMD 05-2 Command & Control Simulations		2Q						
IMD 05-2 Wargame			1Q					
IMD 06 Battle Planning Exercise		3Q						
IMD 06 Command & Control Simulations			2Q					
IMD 06 Wargame			4Q					

Project: 0204 Joint National Integration Center (JNIC)

MDA Exhibit R-4A (PE 0603889C)

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
IMD 07 Battle Planning Exercise				3Q				
IMD 07 Command & Control Simulations				2Q				
IMD 07 Wargame				4Q				
IMD 08 Battle Planning Exercise					3Q			
IMD 08 Command & Control Simulations					2Q			
IMD 08 Wargame					4Q			
IMD 09 Battle Planning Exercise						3Q		
IMD 09 Command & Control Simulations						2Q		
IMD 09 Wargame						4Q		
Missile Defense Integrated Exercises (MDIE)	2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q		
MDIE 4a	2Q							
MDIE 4b	3Q							
MDIE 5a		2Q						
MDIE 5b		3Q						
MDIE 6a			2Q					
MDIE 6b			3Q					
MDIE 7a				2Q				
MDIE 7b				3Q				
MDIE 8a					2Q			
MDIE 8b					3Q			
MDIE 9a						2Q		
MDIE 9b						3Q		
Multinational Wargame			2Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q		
Multinational Wargame 06 Battle Planning Exercise			2Q					
Multinational Wargame 06 Cmd & Control Simulations			3Q					
Multinational Wargame 06			3Q					
Multinational Wargame 07 Battle Planning Exercise				2Q				
Multinational Wargame 07 Cmd & Control Simulations				3Q				
Multinational Wargame 07				3Q				
Multinational Wargame 08 Battle Planning Exercise					2Q			

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Multinational Wargame 08 Cmd & Control Simulations					3Q			
Multinational Wargame 08					3Q			
Multinational Wargame 09 Battle Planning Exercise						2Q		
Multinational Wargame 09 Cmd & Control Simulations						3Q		
Multinational Wargame 09						3Q		
IFT 13C	4Q							
IFT14		4Q						
FTG 04-1		3Q						
FTG 04-5			1Q					
FTG 04-2		4Q						
FTG 06-2				1Q				
FTG 06-1 a/b (Salvo Mission)			4Q					
FTG 06-4				3Q				
FTG 06-3a/b				2Q				
FTG 06-5					1Q			
FT 06-1			1Q					
FT 04-1 (IFT-16a)		2Q						
FT 04-4 (CMCM-2)		4Q						
FT 04-5 (Cobra Dane LRALT)		4Q						
FT 06-6 (GMD RCF-4)				1Q				
FT 04-2 (CMCM-1)		2Q						
FT 04-3 (MRT)		2Q						
FT 06-4 (CMCM-4)				3Q				
BMDS System Integrated Flight Tests Tech Suppt	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
Execute & Support Core Exercise Capability	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2005</b>																	
<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>																			
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603889C Ballistic Missile Defense Products</b>																			
COST (\$ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011															
0602 Program-Wide Support	23,684	16,197	10,548	15,299	17,621	16,473	16,634	15,020															
RDT&E Articles Qty	0	0	0	0	0	0	0	0															
<p><b><u>A. Mission Description and Budget Item Justification</u></b></p> <p>Program-Wide Support provides funding for common support functions across the entire program such as strategic planning, program integration, 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 support contractors providing government staff augmentation in these areas. Applies to costs at the MDA HQ as well as its 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. Other costs include physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses at the various MDA Executing Agent locations, which at the MDA HQ are generally funded from the Management Headquarters Program Element (0901598C). 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.</p>																							
<p><b><u>B. Accomplishments/Planned Program</u></b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td style="text-align: center;">FY 2004</td> <td style="text-align: center;">FY 2005</td> <td style="text-align: center;">FY 2006</td> <td style="text-align: center;">FY 2007</td> </tr> <tr> <td>Civilian Salaries and Support</td> <td style="text-align: right;">23,684</td> <td style="text-align: right;">16,197</td> <td style="text-align: right;">10,548</td> <td style="text-align: right;">15,299</td> </tr> <tr> <td>RDT&amp;E Articles (Quantity)</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> </tr> </table>										FY 2004	FY 2005	FY 2006	FY 2007	Civilian Salaries and Support	23,684	16,197	10,548	15,299	RDT&E Articles (Quantity)	0	0	0	0
	FY 2004	FY 2005	FY 2006	FY 2007																			
Civilian Salaries and Support	23,684	16,197	10,548	15,299																			
RDT&E Articles (Quantity)	0	0	0	0																			
<p>See Section A: Mission Description and Budget Item Justification</p>																							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603889C Ballistic Missile Defense Products					
C. Other Program Funding Summary									
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

Project: 0602 Program-Wide Support

MDA Exhibit R-2A (PE 0603889C)

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