MDA Exhibit R-2 RDT&E Budget Item Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	1,026,566	0	0	0	0	0	0
1010 Battle Management, Command and Control (BM/C2)	113,773	0	0	0	0	0	0
1030 Targets & Countermeasures	125,124	0	0	0	0	0	0
1050 Systems Engineering & Integration	389,582	0	0	0	0	0	0
1060 Test & Evaluation	340,570	0	0	0	0	0	0
1070 Producibility & Manufacturing Technology	17,833	0	0	0	0	0	0
1090 Program-Wide Support	39,684	0	0	0	0	0	0

Note: Starting in FY 2004, funding for these efforts is contained within the Ballistic Missile Defense Test & Targets (0603888C), Ballistic Missile Defense Products (0603889C), and BMD System Core (0603890C) Program Elements.

A. Mission Description and Budget Item Justification

Based on Presidential direction, MDA is developing an initial defensive operational capability that is based on the BMDS Test Bed and augmented with additional development assets. MDA will continue to employ the Test Bed for testing beyond initial fielding to evolve an integrated, layered Ballistic Missile Defense capability.

The Ballistic Missile Defense (BMD) System Segment Program Element (PE) provides the resources to define, integrate, test, demonstrate and evolve the multi-layered BMDS capable of defending the United States, deployed forces, friends, and allies. The BMD System mission is comprised of seven primary projects: C2BMC, Communications, Targets & Countermeasures, SE&I, Test & Evaluation (T&E), Producibility & Manufacturing Technology, and BMD Information Management Systems. Successful performance of these activities is necessary for fielding a multi-layered, evolutionary system for defense in depth against the full spectrum of ballistic missile threats.

The missile defense program has transitioned from an element-centric to a system-centric focus, and from a requirements-based to a capability-based, Block delivery approach. The objective of this approach is to acquire a single, integrated layered Ballistic Missile Defense System (BMDS) that provides multiple engagement opportunities along the entire flight path of threat ballistic missiles. The advantage of this single, integrated layered system approach is that it provides engineers significant opportunity for synergy and trade space to exploit the inherent capabilities of all system elements and their components while optimizing aggregate performance, resulting in operational flexibility and robustness to protect the U.S., deployed forces, friends and Allies around the world. This allows the BMDS to evolve over time employing different combinations of sensor suites, weapons, battle management and command, control, and communications elements as an overarching, integrated capability. The development of this layered BMDS requires a collaborative enterprise comprised of the best and most experienced people from Industry and Government. This collaboration will be accomplished through the employment of the Missile Defense National Team (MDNT). The MDNT will develop and verify BMDS level designs and products for all ground, sea, air and space based elements through the use of models and the BMDS Test Bed. The flow down of BMD System Capability Specifications resulting from MDNT efforts in Systems Engineering & Integration (SE&I) and Command and Control, Battle Management, and Communications (C2BMC) will guide the integration of elements into the BMD System, the BMDS C2BMC architecture, and the BMDS Test Bed.

The BMDS provides initial capabilities and enhances these capabilities over time (block upgrades) by developing and testing defenses that employ complementary sensors, weapons, and communications/decision support systems to engage threats in the boost, mid-course, and terminal phases of flight. Blocks are synergistic sets of validated capability with military utility as demonstrated via the BMDS Test Bed. Each Block is comprised of selected BMDS elements which are able to operate autonomously or provide enhanced capability participating as part of the integrated BMDS Block configuration. Each subsequent Block will build on the predecessor Block. This block approach allows the Missile Defense Agency (MDA) to put the best, most capable technologies "in play" sooner than would otherwise be possible. MDA has designed a comprehensive, but flexible RDT&E program to both integrate and expand existing element capabilities, and to

examine and integrate the widest possible range of promising technologies into the block upgrades. The first BMDS Block is planned for the FY 2004 timeframe. Once demonstrated, Block capability is available for initial defensive operations use, if directed, and transitioned to the services for procurement, operation and support.

The BMDS Command, Control, and Battle Management Communications (C2BMC) element is the integrating function across all BMDS elements. It is also the function that integrates the BMDS into the C2 structure of the Combatant Commanders and into that of allies and friends. C2BMC will evolve from today's limited autonomous point defense BMDS capability into a global integrated BMDS capability. The BMDS C2BMC functionality will mature into Collaborative-Distributed Planning and increased Situational Awareness C2 capabilities that support Engagement Coordination and Integrated Fire Control BM capabilities. A Missile Defense National Team for C2BMC (MDNTB) was assembled to assist MDA with this project. The MDNTB, consisting of MDA, a defense contractor team (MDNTB (I)), Federally Funded Research and Development Centers (FFRDC) and Scientific Engineering and Technical Assistance (SETA) providers, will develop and deliver a flexible integrated BMDS C2BMC.

The Targets and Countermeasures program provides capability-based ballistic missile target systems to include missile subsystems (such as boosters, re-entry vehicles (RV) guidance and control) payloads (sensor packages, countermeasures), and launch support systems. This activity funds new target and countermeasure development, risk reduction flights, subsystem characterization, as well as procures and maintains long lead material of major target components. Advanced target instrumentation, a new liquid booster, Mobile Launch Platform Targets, Medium Range Targets and Long Range Air Launched Target (LRALT) are being developed. In addition, this program supports aging surveillance, refurbishment and reuse of existing inventory such as Minuteman II and Pershing II hardware.

The SE&I project provides the overall systems engineering development and integration of the BMDS. The SE&I mission is to define and manage the layered BMD system, providing the collaborative, layered, and detailed systems engineering and integration required across the entire spectrum of BMDS war fighter capabilities. The SE&I program scope spans the development of individual components (e.g. boosters), elements (e.g. Block 2006 Theater High Altitude Area Defense (THAAD)), BMD segments (e.g. midcourse), and the fully integrated BMD System. SE&I activities provide the engineering core competency, modeling facilities, and integrative engineering development efforts needed to technically manage and field the capability-based BMDS.

The T&E project provides consolidated BMDS-wide T&E capabilities / resources and implements test policy and standards required to enable cohesive execution of all BMDS test activities. T&E efforts include the development, operation, maintenance, and modernization of the T&E infrastructure supporting both the testing of BMDS Elements and System Level testing. It includes resources for the development, maintenance, and configuration management of credible core analytical tools used by all BMDS Elements and for the engineering and testing of integration and interoperability across the BMDS. The project also contains the BMDS System Test and Assessment program that includes system tests, critical measurements, integration tests, and supporting technology experiments. T&E activities associated with specific BMDS Elements are captured in the respective BMDS Element. T&E activities are grouped in terms of System Test and Assessment; Test Resources of facilities, ranges, sensors, and test instrumentation; Modeling and Simulation (M&S); Facilities, Siting, and Environmental (FS&E) efforts; and, Test Policy, Integration, and Mission Assurance.

Producibility and Manufacturing Technology provides tools and strategies for improving technology insertion support of the BMDS spiral development to meet block upgrades. These include near term technology insertion programs that demonstrate capabilities for multiple applications across the BMDS (encompassing risk reduction, performance enhancement, and cost reduction/avoidance). These programs are identified by utilizing systems engineering, analyses and assessments as a basis for offering potential remediation of a BMDS problem area. Producibility and Manufacturing Technology then provides manufacturing technologies and implementation strategies that will benefit all the BMDS.

BMD Information Management efforts will improve the management of and access to data, information and knowledge throughout the MD Enterprise. The new project will assist the acquisition of Missile Defense systems by a) providing IM/IT policies, processes and infrastructure through the MD Enterprise that allows for daily operations to be performed in an efficient, secure and affordable manner; b) creating an Enterprise Information Management System and processes using web-based technologies and establishing electronic business practices that help achieve more effective and more efficient and secure business and mission activities throughout the MD Enterprise; c) improving IT infrastructure that supports design, development and testing of MD systems; and d) development of information architectures that identify information needs for interoperability among MD systems.

MDA Exhibit R-2 RDT&E Budget Item Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Program Operations under this project covers personnel and related support costs, statutory and fiscal requirements. May include funding for government civilians performing program-wide oversight functions such as contracting, program integration, safety, quality and mission assurance at Missile Defense Agency (MDA); cost estimating; audit; technology integration across all MDA projects; and assessment of schedule, cost and performance, documentation of related programmatic issues and, foreign currency fluctuations on limited number of foreign contracts. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510.

B. Program Change Summary	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004 PB)	1,046,652	0	0
Current President's Budget (FY 2005 PB)	1,026,566	0	0
Total Adjustments	-20,086	0	0
Congressional Specific Program Adjustments	0	0	0
Congressional Undistributed Adjustments	0	0	0
Reprogrammings	16,296	0	0
SBIR/STTR Transfer	-36,382	0	0

Resources for FY 2004 and beyond have been transferred to the BMD System Test and Targets (0603888C), BMD Products (0603889C), and BMD System Core (0603890C) Program Elements.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
1010 Battle Management, Command and Control (BM/C2)	113,773	0	0	0	0	0	0
RDT&E Articles Qty	6	0	0	0	0	0	0

Note: Starting in FY 2004, funding for this effort will contained within the Ballistic Missile Defense Products (0603889C) Program Element.

A. Mission Description and Budget Item Justification

The BMDS Command, Control, Battle Management and Communications (C2BMC) element is the integrating function across all BMDS elements. It is also the function that integrates the BMDS into the C2 structure of the Combatant Commanders and into that of allies and friends.

MDNTB:
Missile Defense Agency (MDA) established a Missile Defense National Team BM/C2/Comm (MDNTB) construct to deliver an integrated BMDS C2BM system. This effort requires a collaborative enterprise comprised of the best and most experienced minds of Industry and Government. The MDNTB is composed of major defense contractors, Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), and Scientific Engineering and Technical Assistance (SETA) providers. The concept of operations for the MDNTB is as follows: the Government provides the overall management of the BMDS program and participates within the MDNTB; and the MDNTB is responsible for the engineering, design, development and delivery of an executable BMDS C2BMC integration framework, BMDS C2BMC Block capability specifications, and the integration of BMDS Elements into the BMDS C2BMC integration framework.

BMDS BM:
The BMDS BM will substantially enhance BMDS effectiveness beyond that achievable by stand-alone systems. The BM component integrates kill chain functions (surveillance, detect/track/classify, engage and assess) across the layered defenses (boost, mid-course, terminal, and external sensors (Space Based Infrared System - SBIRS)) and evolves with the BMDS elements. Initially, BM will deliver the hardware/software (HW/SW) necessary to provide the means for executing pre-planned responses by integrating available information to provide the user with increased automation capability and ability to integrate information from increasingly diverse resources. BM will eventually provide a highly flexible and configurable framework for real time, adaptive coordination of missile defense assets, while also supporting the incorporation of new elements. Block 2004 BM component currently plans to integrate Ground Missile Defense System (GMDS), Theater High Altitude Air Defense (THAAD), Airborne Laser (ABL), Patriot 3 (PAC-3) Interceptor, Aegis BMD, Space Tracking & Surveillance System (STSS), and Defense Support Program (DSP). This may change as a result of annual Block capability reviews.

BMDS C2:
The BMDS C2 provides a flexible, integrated component to plan, direct, control and monitor missile defense activities. C2 sets the framework for all subordinate commands' actions, including decisions concerning the defense course of actions; force lay down, consistent shot doctrine, etc. In addition, it provides the means to quickly re-plan and adapt to changing mission requirements. C2 develops the operational war fighting aids required for the command structure to formulate and implement informed decisions. BMDS C2 integrates, where applicable, new capabilities into National C2 Systems, Global Command and Control System (GCCS), Theater Battle Management Core Systems (TBMCS), North American Air Defense/US Combatant Commander Space Command Warfighter Support System (N/UWSS), Joint Defensive Planner (JDP) and other relevant C2 mission applications. The BMDS C2 also integrates the Combatant Commanders, North American Treaty Organization (NATO) and other allies, friends, and other external systems to which BMDS C2 will connect. Block 2004 C2 component provides prototypes to support Combatant Commanders. This may change as a result of annual Block capability reviews.

COMMUNICATIONS:
The BMDS Communications efforts will consolidate, refine requirements, and develop upgrades to existing communication systems that are being developed by the BMDS. It is responsible for developing capabilities that will allow all components of BMDS to exchange data, and to permit C2 orders to be transmitted to the weapon and sensor systems. Delivery of the Joint Range Extension

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

(JRE) long-haul communications capability during the FY 2002/FY 2003 timeframe fills a critical, and timely, warfighter need in this area. The Communication network(s) will seamlessly connect BMDS assets and link them with other applicable DoD and non-DoD networks and assets as required by optimizing the use of existing and future data and information conduits and protocols such as the Global Information Grid.

INTEGRATION TEST SUPPORT:
Part of this funding will support integration and testing activities at the JNIC. A state-of-the-art Development and Integration Environment Laboratory will be established to support C2BMComm Integration framework and Systems Specification development; develop, test and evaluate prototype C2BMC components; and support other critical BMDS C2BMC efforts with the goal of fully integrating the war fighters, systems engineers, and BMDS Elements capabilities developers and testers. The MDNTB will perform most of the BMDS C2BMC Test Bed component; System Specification and Elements assessment, integration, testing and validation work at the JNIC.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
C2BMC	101,818		
RDT&E Articles (Quantity)	6		

The Missile Defense National Team for BM/C2/Comm (MDNTB) will deliver BMDS C2BMC element definition, system design, planning for the content of each block as well as integration of C2BMC components. Four major activities shall be completed: 1) define the BMDS C2BMC Element Capabilities and the evolutionary plan for achieving those capabilities; 2) develop, integrate and test a supportable Test Bed System Level C2BMC capability that could also be deployed in the event initial defensive operations are required; 3) support demonstrations and experiments; 4) define the approach to support the initial defensive operations deployable capability and define the components and attributes of the necessary acquisition package for transitioning the BMDS C2BMC to full-scale development and deployment.

To achieve the above objectives, the MDNTB shall develop and provide C2BMC system architecture and operational architecture description data to include C2BMC element and interface data for each BMDS element, and for the Objective C2BMC element. Block 2004 shall receive primary emphasis; work on Block 2006 and on the Objective Architecture shall be accomplished as required.

BLOCK 2004:
The Block 2004 C2BMC element shall provide C2 capability for planning, situational awareness, and control, BM capability for track correlation and execution of preplanned responses, and communications among C2 nodes, BM nodes, Block 2004 sensors and Block 2004 weapon systems. It shall include an initial capability to leverage and incorporate the data from multiple sensors (sensor netting) to improve track correlation quality and target discrimination.

- Enhance system level tracking and discrimination capability to include Improved/Precision Cueing for Aegis SMD to GMD.

- Design and integrate Sensor Netting and Early Warning capabilities into the Block 2004 C2BMC. This effort shall also incorporate, as appropriate, products developed by Project Hercules. Perform Sensor Netting work including coding and productizing Hercules algorithms for the BMDS Test Bed; Discrimination Fusion, track fusion, sensor registration and advanced Sensor Netting engineering validation.

- Develop a new stand-alone C2BMC node prototype to provide a centralized C2/BM capability for the BMDS; and weapon system/sensor system C2BMC HW/SW that perform as components of the C2BMC element.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

- Create an initial description of the C2BMC Objective Element. The Objective C2BMC Element will be updated annually. The purpose is to provide an aim point that's continually ahead and guides technology investment decisions.

- Develop, implement and operate a C2BMC-Experimental (C2BMC-X) environment at the JNIC to perform/support demonstrations, experiments (including technology insertion), exercises, war games, and user assessments.

- Develop, implement and operate two Development and Testing laboratories and three Integration and Testing laboratories at Huntsville, AL, and Colorado Springs, CO., for BMDS C2BMC Test Bed prototype development. One of the C2BMC I&T Suites will double as the BMDS C2BMC Node at the JNIC. Complete Block 2004 Spiral development cycles.

- Perform analysis of current deployment capabilities and logistics requirement of the C2BMC composite element and impact analysis for deploying the C2BMC element for an initial defensive operations capability and the production version of the deployable system.

- Establish Global Command & Control System-Missile Defense (GCCS-MD) with DISA, and develop and field GCCS-MD mission applications. Continue development and integration of Joint Data Planner into GCCS. Continue Early Warning project focusing on technical data package (functional specifications) and finalizing the Early Warning Master implementation Plan.

- Continue work on BMDS Information Technology Migration study to support independent technology insertions. Continue cooperative analysis on NATO(BMC2) functions required to integrate NATO Air Command and Control System integration into BMDS. Continue TMD and Strategic Missile Defense Data Interoperability Assessment program. Continue GE(EAD) Annex C program to jointly develop BMC3 functions required to integrate German AF TMD capabilities into BMDS. Continue Joint Technical Architecture (JTA) efforts to develop standard interface profiles for the Objective BMDS.

- Support C2BMC Integration Test Center and C2BMC-X Battle lab in accordance with MDNTB directed updates, interfaces and connectivity requirements and software purchases and licenses.

- Complete JRE standard development and testing (Block 2004) in order to enhance BMD Situational Awareness by extending Link 16 information between the Services' major C2 nodes beyond line of sight.

- Develop and test the communications integration and test environment of the C2BMC Test Bed to ensure high availability of communications for the system.

- Design and integrate JRE capability for Aegis BMD (Block 2004).

- Embed the JRE capability into BMDS, and continue to update the JRE Application Protocol (JREAP). Initiate development of JRE capability for Aegis BMD.

- Continue to develop long-haul communications requirement for the BMDS. Support DISA efforts to implement a global communication capability, interconnecting the theaters, Combatant Commanders, GMD and the national level C2BMC element node at the JNIC.

- Continue BMDS Information Assurance/Computer Network Defense (IA/CND) efforts begun in FY 2002. Update IA/CND Implementation plan and threat/risk assessment. Perform IA/CND Architecture Design. Evaluate BMDS component compliance with architecture.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

	FY 2003	FY 2004	FY 2005
COMMUNICATIONS	11,955		
RDT&E Articles (Quantity)			

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing

D. Acquisition Strategy

C2/BM/C will 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 design and development of a BMDS Command and Control, Battle Management and Communication (C2/BM/Comm) Architecture and System Specifications is a collaborative effort. The strategy is to require the Missile Defense National Team C2/BM/Comm (MDNTB) to perform the engineering and delivery of an executable C2/BM/Comm Test Bed, BM/C2/Comm Block capability specifications, design specifications and interface control documents for the BMDS. The MDNT will be composed of two industry teams (MDNTB & MDNTS), major defense contractors, engineers from Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC) and System Engineering and Technical Assistance (SETA) defense contractor(s), and the government.

The intent is to develop a fully capable BMDS Test Bed while retaining development capability that can be used for initial defensive operations deployment . C2/BM/C capability can be transitioned into further operational force structure via coordination with the Services and their acquisition community so they can plan, budget and procure necessary HW/SW for operational deployed and sustained forces.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
C2BMC										
MDNTB	SS/CPAF	MDNTB/ Gaith, MD; Arl, VA	24,890						24,890	
Subtotal Product Development			24,890	0		0		0	24890	

Remarks

II. Support Costs Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
C2BMC										
SETA	C/CPFF	MDA, HQ/ Arl, VA	2,900						2,900	
Subtotal Support Costs			2,900	0		0		0	2900	

Remarks

III. Test and Evaluation Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
C2BMC										
JNIC	Various	JNIC/ CO	3,000						3,000	
Subtotal Test and Evaluation			3,000	0		0		0	3000	

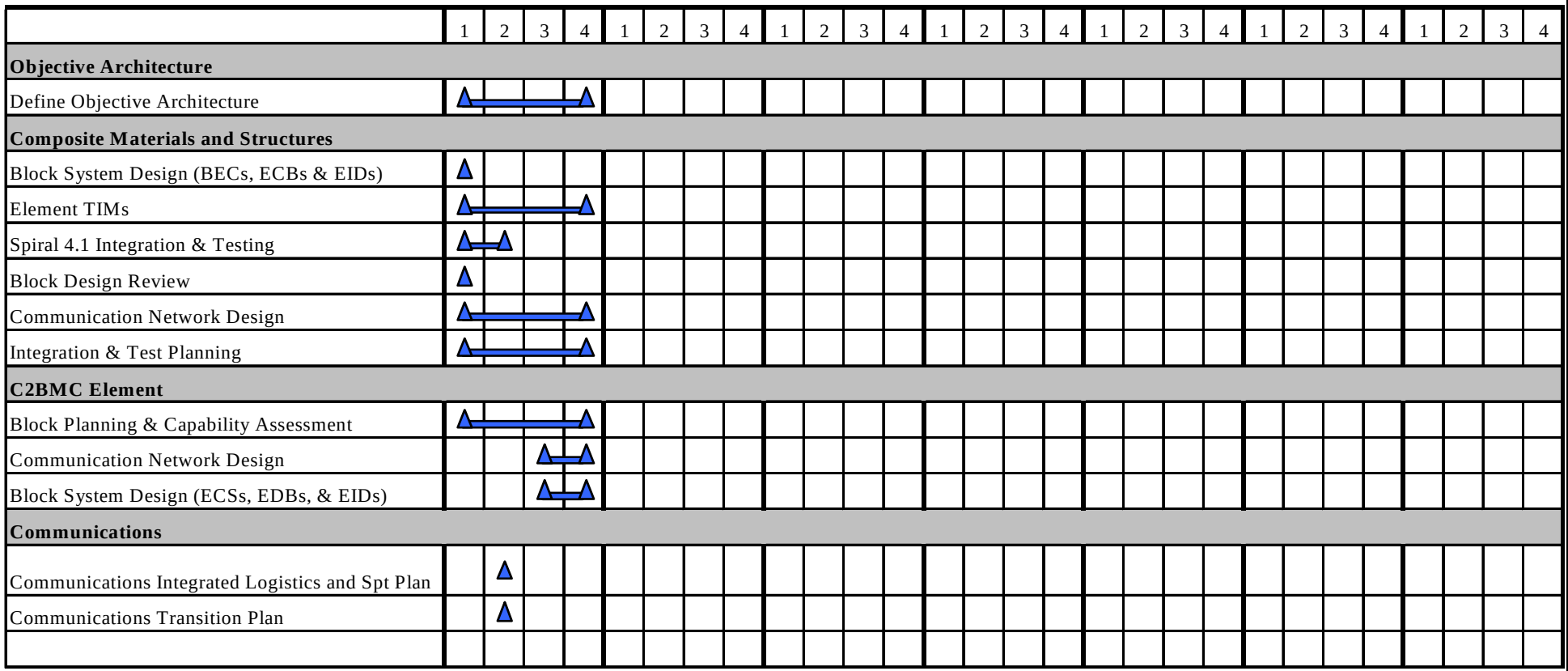
Remarks

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

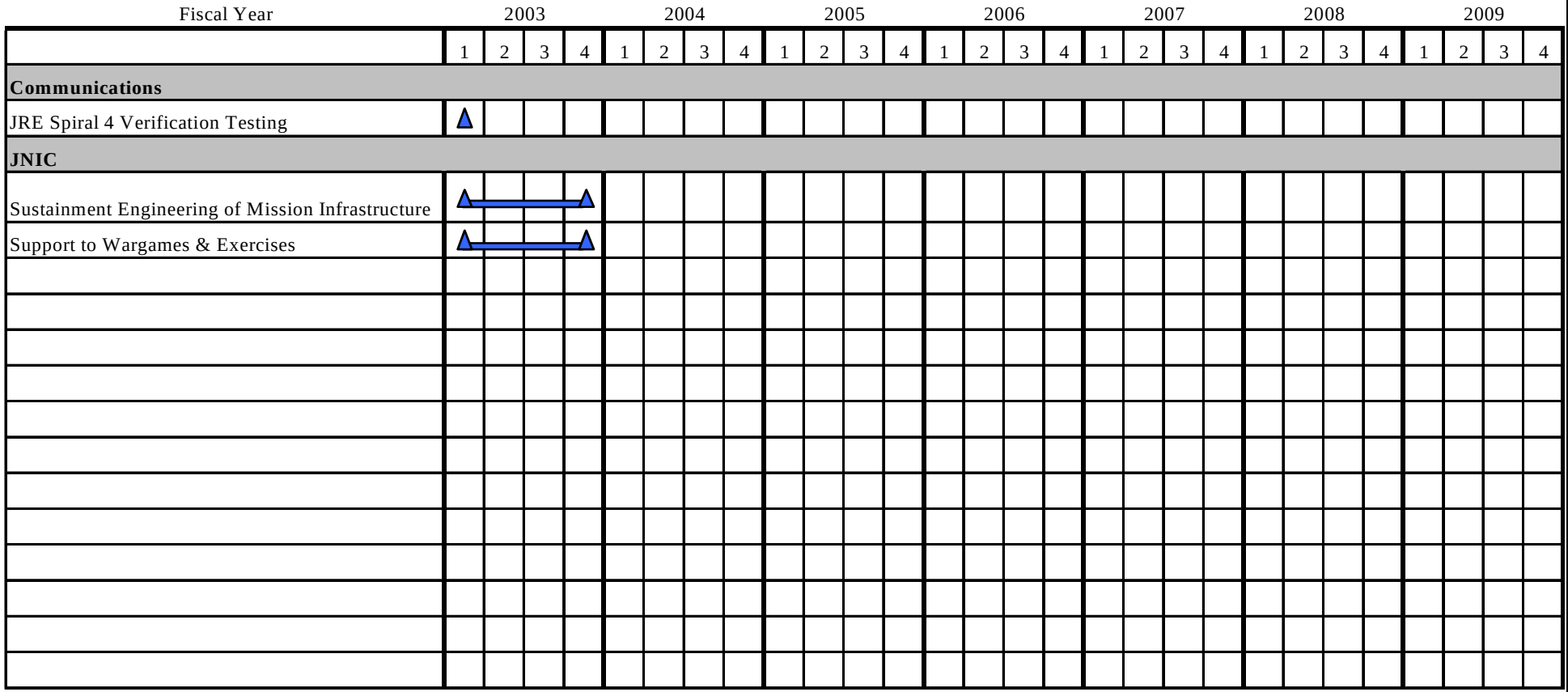
IV. Management Services Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Management Services										
Remarks										
Project Total Cost			30,790	0		0			30,790	
Remarks										

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Objective Architecture							
Define Objective Architecture	1Q-4Q						
Composite Materials and Structures							
Block System Design (BECs, ECBs & EIDs)	1Q						
Element TIMs	1Q-4Q						
Model & Sim Tools (Eval/Instal)	1Q-3Q						
Spiral 4.1 Prototype Development	1Q-2Q						
Spiral 4.3 Prototype Development	3Q-4Q						
Modeling & Simulation Analysis	1Q-4Q						
Spiral 4.1 Integration & Testing	1Q-2Q						
Block Design Review	1Q						
Deployment & Logistics Spt Planning	1Q						
Spiral 4.2 Prototype Development	1Q-4Q						
Communication Network Design	1Q-4Q						
Integration & Test Planning	1Q-4Q						
Spiral 4.2 Integration & testing	3Q-4Q						
C2BMC Element							
Block Planning & Capability Assessment	1Q-4Q						
Communication Network Design	3Q-4Q						
Modeling & Simulation Analyses	3Q-4Q						
Block System Design (ECSs, EDBs, & EIDs)	3Q-4Q						
Communications							
Communications Integrated Logistics and Spt Plan	2Q						
Communications Transition Plan	2Q						
JRE Spiral 4 Verification Testing	1Q						
BM/C2/C-X Experiment							
BM/C2/C-X Experiment	1Q-4Q						
JNIC							
Sustainment Engineering of Mission Infrastructure	1Q-4Q						
Support to Wargames & Exercises	1Q-4Q						

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
1030 Targets & Countermeasures	125,124	0	0	0	0	0	0
RDT&E Articles Qty	6	0	0	0	0	0	0

Note: Starting in FY 2004, this project transitioned to PE 0603888C, Ballistic Missile Defense Test and Targets.

A. Mission Description and Budget Item Justification

The Targets and Countermeasures program funds the design, prototyping, development, acquisition, certification, product improvement, and qualification testing of a suite of targets and payloads to test the capability of the Ballistic Missile Defense System (BMDS). Specifically, this program provides capability-based ballistic missile full up target systems to include target sub-systems such as boosters, payloads (re-entry vehicles, sensor packages, countermeasures, and on-board instrumentation), and launch support systems in support of the BMDS Block strategy. New target and payload development, risk reduction flights, sub-system characterization, and the acquisition and maintenance of long lead material of major target components will be accomplished. This program funds the development of key target systems for use in BMDS testing; all elements (e.g., Ground Based Midcourse, AEGIS Ballistic Missile Defense (BMD), THAAD, etc.) fund the acquisition and use of targets required for BMDS testing. The following current and new developments are planned to meet Block 2004 testing:

- Continued the development of Short Range Air Launch Targets (SRALT) to support Arrow, Patriot (PAC-3), and Theatre High Altitude Area Defense (THAAD).
- Continued the development of Long Range Air Launch Targets (LRALT) to support THAAD and Arrow.
- Continued the development of Short Range Liquid Fuel Target Booster.
- Initiated the modification of a Foreign Material Acquisition (FMA) target launched from a Mobile Launch Platform to support Arrow and THAAD.
- Initiated the development of multi-mode Medium Range Targets to support Aegis BMD and THAAD.
- Initiated and completed 4 total payloads suites for use in Critical Measurements and Countermeasures (CMCM) tests.

Central to the development and acquisition of ongoing and new target systems to support the BMDS block testing schedule is the utilization of a prime contractor. During 1Q/FY 2004, the Targets and Countermeasures Directorate will award a prime contract to a contractor who will be responsible for, but not limited to: 1) providing systems engineering across the targets portfolio, including managing and executing Block target requirements; 2) developing future target booster development activities; 3) designing and developing BMDS payloads and countermeasures; 4) developing advanced targets; and, 5) Long Lead Material and Asset Management.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Payload Development	25,396		
RDT&E Articles (Quantity)	2		

This effort continued the development of capability-based payloads (re-entry vehicles, countermeasures, on-board instrumentation) to include design, development, characterization, instrumentation, and testing efforts in support of Advanced Concepts Flight Tests (ACFT). These flight tests required capability-based payloads to collect and assess critical phenomenology data in order to develop realistic payloads in for targets used in BMDS flight tests. This effort also developed a next generation Fly Along Sensor Package (FASP), which provides critical visible and infrared imagery for missile defense seeker performance risk reduction, algorithm evaluation, and target payload characterization.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

FY 2003 Accomplishments:
- RDT&E Test Articles: 2 payloads for ACFT-1b in May / June Flight FY 2003.
- Began development of SLO payload suite (RV, instrumentation, associated objects, payload interface) to support Ground-based Midcourse Defense (GMD) to support RCF-3 (3Q05) and future IFTs.
- Initiated payload suite design and development for CMCM Campaign 1a & 1b tests in 2Q FY 2005.
- Initiated payload design and development for two CMCM-2a and 2b tests in 4Q FY 2005.
- Completed payload development for an ACFT in April 2003.
- Continued development of the FASP.

	FY 2003	FY 2004	FY 2005
Target Development	75,028		
RDT&E Articles (Quantity)	4		

This effort provided: 1) ongoing target development; 2) new target development efforts required for full-up BMDS testing across the entire spectrum of target launch trajectories; and, 3) continued early concept development and prototyping of advanced systems or sub-systems for BMDS targets. On-going target development efforts funded in this area included: the Short Range Air Launch Target (SRALT); the Long Range Air Launch Target (LRALT); and, a Short Range Liquid Fuel Target Booster (LFTB). New target systems initiated in FY 2002 and conducted for FY 2003 included: modification of an FMA target launched from a sea-based Mobile Launch Platform and the development of a multi-mode Medium Range Target. Early concept development and prototyping efforts included an Enhanced Target Delivery System (ETDS) concept definition study, completed in FY 2002.

FY 2003 Accomplishments:
- RDT&E Test Articles: 2 LRALTs for risk reduction testing; 2 Lances for FMA / Mission Launch Platform proof-of-principle testing.
- Completed two proof-of-principle tests (launched two Lance missiles from the Mobile Launch Platform) for the FMA / Mobile Launch Platform effort .
- Continued LRALT development and risk reduction flight testing.
- Continued SRALT and Short Range LFTB development efforts / contracts.
- Awarded a Medium Range Target contract.

	FY 2003	FY 2004	FY 2005
Asset Management	7,963		
RDT&E Articles (Quantity)			

This effort continues a risk reduction initiative designed to ensure the availability of capability-based targets for BMDS flight tests. Additionally, this effort provides limited long-lead target modules that will be procured in economic quantities and stored for use in BMDS flight tests. The modules include components of capability-based RV's, inter-stages, and related hardware. Upon definition and approval of a BMD target requirement, the modules will be provided to a target integrator who will perform integration, flight readiness, and launch support. This effort also includes maintenance, aging surveillance, refurbishment, and routine testing of existing Government Furnished Equipment (GFE) boosters. GFE boosters include Minuteman, Peacekeeper, Lance, and Pershing assets.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

	FY 2003	FY 2004	FY 2005
Personnel/Support Costs	7,586		
RDT&E Articles (Quantity)			

Provides for government personnel, project costs, and targets program management support.

	FY 2003	FY 2004	FY 2005
Target Support	9,151		
RDT&E Articles (Quantity)			

This effort funds target and target-related engineering and technical assistance; Missile Defense Targets Joint Program Office (MDTJPO) core operations (routine facility maintenance, rent, office equipment); and mission support (range and flight test operations for targets) to all BMDS programs. Also, Federally Funded Research and Development Centers (FFRDC) are funded to assist the targets program by providing unique requirements, certification, and instrumentation analyses.

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing

D. Acquisition Strategy

Targets and Countermeasures Program will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. To support this strategy, the Targets and Countermeasures Program will award a ten year prime contract in FY04 (four year base plus three 2-year option periods) to an offeror who will provide the targets to test against the layered and integrated BMDS. The Targets prime contract will also add a new capability for Targets and Countermeasures systems engineering and provide single system management for the Targets and Countermeasures Program. Overall objectives of this procurement are to deliver reliable target system performance, to provide system level engineering and management through an integrated prime contractor, to reduce target acquisition cycle time, to control target program costs and stimulate creative cost reduction initiatives, and to focus on components and capability-based product lines through integration and launch of target systems. The contract will be a combination of Cost Plus Award Fee and Firm Fixed Price Delivery Orders under two Contract Line Items (CLIN's). This structure allows for maximum flexibility to produce either full blown up targets to test new concepts and ideas, or product lines under which common target components will be developed, integrated, and tested. By emphasizing common target components, it is anticipated that a reduction in both cycle time and cost will be achieved. As the targets prime contract begins its first four year base period, current on-going target development contracts will generally be completed under the terms of their existing contracts. This includes a variety of individual and Task Order Cost Plus Fixed Fee and Cost Plus Award Fee contracts. Some on-going target developments, however, may transition to the prime contractor depending on the status of the contract and maturity of the target system being developed. The government will maintain system responsibility and will ensure successful management of BMDS targets execution.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Target Development										
Short Rng Air Launch Target	C/CPFF	Orbital Sciences Corp./ Chandler, AZ	17,295						17,295	
Long Range Air Launch Target	C/CPIF	Coleman Aerospace Corp/ Orlando, FL	6,841						6,841	
Short Rng Liquid Fuel Booster	C/CPFF	TRW / Orbital Sciences Corp/ CA / AZ	13,895						13,895	TBD
FMA/Mobile Launch Platform	C/Various	Lockheed Martin/ Huntsville, AL	5,740						5,740	
Medium Range Target	C/Various	TBD	11,811						11,811	
Advanced Development	C/Various	TBD	6,754						6,754	
FM-7 / 8 Target	C/CPFF	Orbital Sciences Corp./ Chandler, AZ	12,692						12,692	
Payload Development										
Fly Along Sensor Package	C/FFRDC	MIT/LL/ Boston, MA	7,266						7,266	
CM Design, Develop, Charact	C/Various	Various	12,530						12,530	
HARDFAC	C/FFRDC	AFRL/ Albuquerque, NM	2,400						2,400	
SLO	C/FFRDC	SNL/ Albuquerque, NM	3,200						3,200	
Subtotal Product Development			100,424	0		0		0	100424	

Remarks

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

II. Support Costs Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Target Support										
MDTJPO Support	C/Various	Various/Huntsville, AL	5,238						5,238	
Systems Engineering	C/Various	JHU/APL/ Laurel,MD	400						400	
SMC Support	Various	Various/Kirtland, AFB/ NM	325						325	
MDTJPO Core/Mission Support	Various	Various/Huntsville, AL	3,188						3,188	
Subtotal Support Costs			9,151	0		0		0	9151	

Remarks

III. Test and Evaluation Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Asset Management										
Various Booster Management	Various	Various	7,963						7,963	
Subtotal Test and Evaluation			7,963	0		0		0	7963	

Remarks

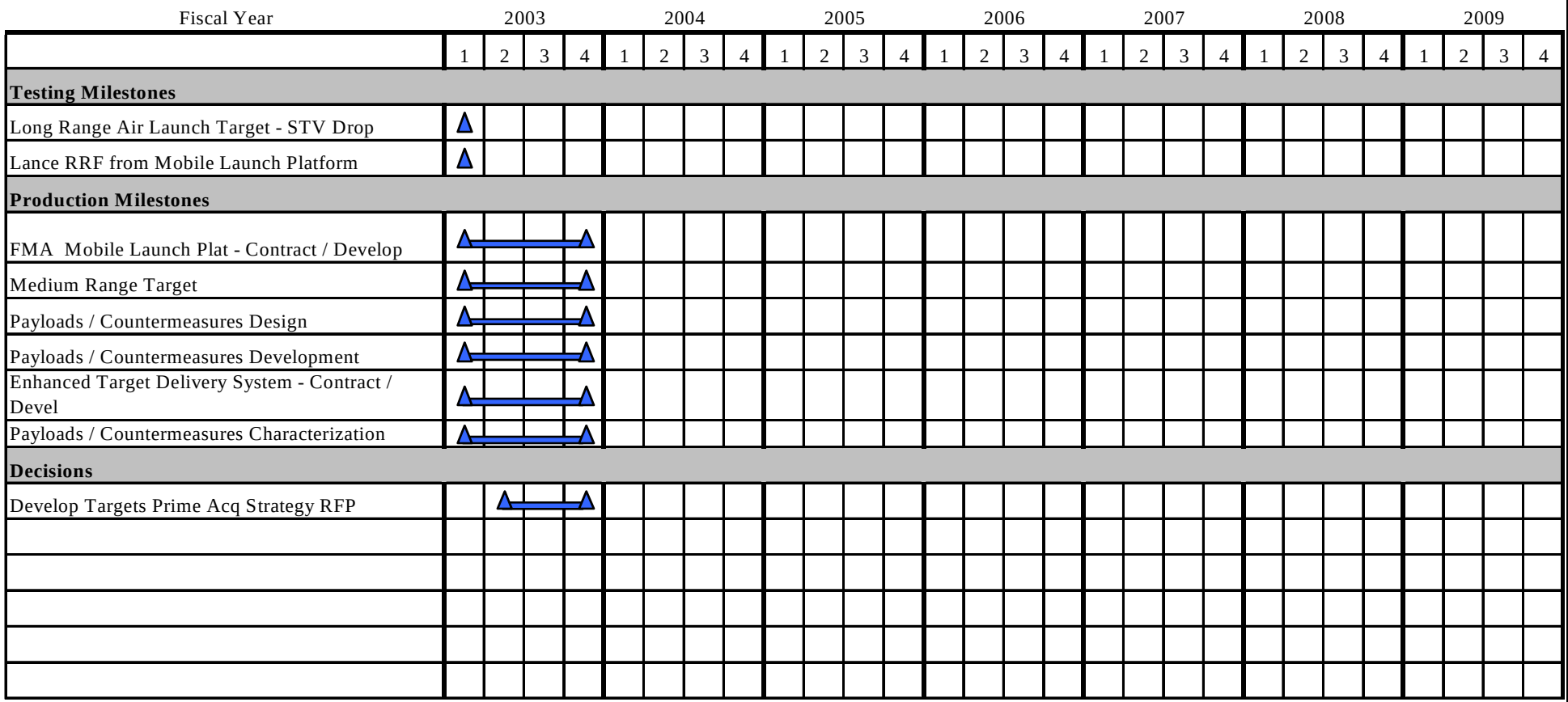
MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

IV. Management Services Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Personnel/Support Costs										
MDTJPO Govt Proj Per & Suppt	C/Various	Govt Agency - MDTJPO/ Huntsville, AL	4,630						4,630	
Targets Mgt Support	C/Various	Various/ Washington, DC	2,784						2,784	
Government Travel	C/Various	Washington, DC	172						172	
Subtotal Management Services			7,586	0		0		0	7586	
Remarks										
Project Total Cost			125,124	0		0			125,124	

Remarks

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones							
Long Range Air Launch Target - STV Drop	1Q						
Lance RRF from Mobile Launch Platform	1Q						
Production Milestones							
FMA Mobile Launch Plat - Contract / Develop	1Q-4Q						
Medium Range Target	1Q-4Q						
Payloads / Countermeasures Design	1Q-4Q						
Payloads / Countermeasures Development	1Q-4Q						
Enhanced Target Delivery System - Contract / Devel	1Q-4Q						
Payloads / Countermeasures Characterization	1Q-4Q						
Decisions							
Develop Targets Prime Acq Strategy RFP	2Q-4Q						

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
1050 Systems Engineering & Integration	389,582	0	0	0	0	0	0
RDT&E Articles Qty	10	0	0	0	0	0	0

Note: Starting in FY 2004 this Project is PE 0603889C (BMD Products), all Projects, and PE 0603890C (BMD System Core), all Projects.

A. Mission Description and Budget Item Justification

The missile defense program has transitioned from a focus on individual Element programs to the development of a single, integrated, layered Ballistic Missile Defense System (BMDS). This requires an engineering program that integrates the development of individual components and Element systems across all phases of a threat ballistic missile's flight to provide a capability for multiple engagements along the entire flight path. The MDA System Engineering and Integration (SE&I) mission is to define, manage, and integrate all engineering development for the BMDS. SE&I activities provide the technical expertise, tools, and facilities to develop the BMDS. These activities include the System Engineering and Architecture (SE&A), Threat Systems Engineering (TSE), Advanced Systems, Intelligence System Threat, Joint Warfighter Support, Joint National Integration Center, Cooperative Programs and Allied Support, and BMD Information Management efforts.

SYSTEM ENGINEERING AND ARCHITECTURE/THREAT SYSTEMS ENGINEERING:

System Engineering and Architecture (SE&A) is the core technical effort to define, design, and verify the capability of the BMDS, and to enhance these capabilities over time through block upgrades. SE&A develops a set of time-phased technical goals and objectives to guide the design and development of evolutionary capabilities for the BMDS. These goals and objectives are listed and described in the BMDS Technical Objectives and Goals (TOG) document. The design and evolution of an integrated, layered BMDS is a complex engineering task requiring the collaboration of the best and most experienced people from Industry and Government. The SE&A activity achieves this collaboration through the use of a Missile Defense National Team System Engineering (MDNTS). Engineering products developed through this team concept are baselined and controlled via a BMDS Configuration Control Board (CCB). The MDNTS prepares the System Evolutionary Plan (SEP) to describe the content of the BMDS development program based on the guidance in the TOG. The program content described in the SEP defines the time-phased capability of the BMDS. The MDNTS then prepares the System Capability Specification (SCS) to allocate these capabilities to component and Element programs for development. The SCS defines the technical baseline for the BMDS development program and provides technical direction to developers. The design and capability of the BMDS is verified by tests and evaluations using models and the BMDS Test Bed. SE&A prepares the Government Verification Management Plan (GVMP), and the MDNTS develops the verification requirements, which are incorporated into the SCS. Force-on-force and detailed analyses are conducted in accordance with the GVMP to establish expected capabilities and to assess system effectiveness against Technical Performance Measures developed by the MDNTS. These assessments also enable the MDNTS to track the technical progress and performance of the BMDS and to support the SE&A Risk Management Program (RMP). The RMP identifies and assesses system risks based on the priorities in the TOG and maintains plans to mitigate those risks. SE&A conducts engineering analysis in key focus areas such as Lethality, Kill Assessment, Phenomenology, and Countermeasures/Counter-Countermeasures. These analyses are fed back into the systems engineering process to support evolutionary block upgrades to the BMDS. Threat System Engineering (TSE) develops and maintains detailed characterizations of the threat to support BMDS design, development, and verification activities. TSE conducts engineering analyses to define technologically feasible threats and develops the Adversary Capability Document (ACD) that parametrically describes threat capabilities. The ACD guides BMDS design and development and supports the evaluation of BMDS robustness to unexpected variations in the threat. TSE conducts modeling and simulation of the ACD data to produce benchmark scenarios that illustrate the performance of threat systems in order to support analyses of the BMDS. TSE also identifies potential countermeasures and determines their technical feasibility to support engineering analyses and risk assessment of the BMDS. These countermeasure products are also essential for other BMD focused efforts such as Project Hercules, the Targets and Countermeasures Program, and the Countermeasures/Counter-Countermeasures Program. The MDA Countermeasures/Counter-Countermeasures program operates two adversary teams, each with a different threat perspective, to generate countermeasures to BMDS capabilities: a Red Team that is restricted to using only information on the BMDS available from open sources, and a Black Team that has complete access to all technical data on the BMDS in order to identify potential system vulnerabilities and technical concerns. A White Team, comprised of senior technical experts, reviews the adversary teams' concepts and provides MDA with an independent assessment of their feasibility and risk to the BMDS. The program's Blue Team develops capability improvements, also reviewed by the White Team, to counter the impact of high-risk vulnerabilities. The program funds initiatives to develop the Blue Team counter-countermeasures and demonstrate their readiness for insertion into the BMDS. The program budget supports two cycles per year of countermeasure generation and development of counter-countermeasure responses.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

ADVANCED SYSTEMS:
The Advanced Systems Deputate (AS) leads a national effort to assess and pursue innovative concepts and develop algorithms to improve BMDS capability. The Advanced Systems Innovative Concepts (ASIC) process evaluates all internally and externally generated advanced concepts to prove their viability and maintains cognizance over leading edge concepts that could contribute to evolutionary and revolutionary BMD capability enhancements. AS also leads the BMDS Small Business & Innovative Research (SBIR) evaluation process. The Advanced Systems (AS) Deputate Project Hercules is charged with establishing a national effort to develop robust adaptive algorithms to counter off-nominal and evolving missile threats. Project Hercules is developing a decision architecture; the application of advanced decision theory to future BMDS command, control and battle management concepts. Project Hercules provides ongoing algorithm development in response to BMDS element identifying critical algorithm needs in both the near and far terms. Project Hercules products will be provided to the Elements for insertion into their respective programs. In effect, Project Hercules will make capable sensors smarter by bringing algorithm development to the same level as that for developing hardware. Project Hercules utilizes an integrated corporate MDA effort approach to solving the algorithm needs of the Elements. Project Hercules brings together national experts from government organizations and private corporations to solve complicated decision and discrimination algorithm requirements.

INTELLIGENCE:
The Intelligence Directorate's primary mission is to serve as the principal advisor to the MDA Director and staff on all intelligence matters. Functional areas include current intelligence, intel assessments, scenarios, wargaming, asymmetric threat, and foreign material acquisition/exploitation. To accomplish this mission, a current and projected intelligence program, which is based on intelligence community projections, that is traceable to quantifiable analysis. This program defines and documents potential adversary military systems and forces, principally theater and strategic missiles, which BMD systems could confront. This program produces intelligence community-validated threat descriptions and associated capstone threat and countermeasure information as well as Intel-based threat scenarios. As the ACD benchmark scenario threats produced by TSE are finalized, IN will also develop capabilities-based strategic and theater conflict scenarios (STCS) by integrating ACD threat systems into the context of STCS. The ACD benchmark "scenarios" are more accurately described as system-level threat descriptions and 3DoF models, with the intent of allowing the ACD user to select their own launch and aim points. By inserting these conceptual threats within a STCS, the user has access to a scripted scenario conflict with all the road-to-war data appropriate for a BMD wargame or exercise.

JOINT WARFIGHTER SUPPORT:
The Joint Warfighter Support program ensures that warfighter operational perspectives and concerns are reflected in the development of Ballistic Missile Defense (BMD) capabilities. The Deputy for Force Structure Integration and Deployment (TR) works with the Combatant Commanders, Services and Joint Staff through seminars, wargames, and exercises to achieve this goal. Through interaction, areas of improvement in BMD capability are identified for action. This project also supports planning for initial defensive operations capabilities, integration of USSPACECOM/USNORTHCOM in required wargames, tabletops, experiments, and System Integrated Tests and Hardware in the Loop Tests required for enhanced use of JNIC in support of operational concept development.

JOINT NATIONAL INTEGRATION CENTER:
The Joint National Integration Center (JNIC) operates and maintains concurrent testing and operations centers for the C2BMC and Ground-based Midcourse Defense elements of the Ballistic Missile Defense System (BMDS). It provides technical capabilities and 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. The JNIC operates 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 as well as a modeling & simulation center. Beginning with IDO, and extending through Blocks 04, 06, 08 and beyond, the JNIC will be a "Host Center Services provider" for both BMDS RDT&E and real-world operations. Host Center Services include:

- JNIC support to the GMD Mission Control Center Facility (MCCF) and the GMD Fire Control/Communications (GFC/C) Mission Operations Center (GMOC).
- Operational support and connectivity of the C2BMC Integration and Test Center (BITC), and the C2BMC Experimentation Laboratory (X-Lab).
- Development and support of the BMDS Operations Center (BOC) and the Backup MDA Operations Center (BMOC).

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

- Infrastructure support of the Satellite Tracking and Surveillance System (STSS) Operations Center, Near Field Infrared Experiment (NFIRE) JNIC Mission Operations Center (JMOC), and sensor netting Test Bed.
- Development and support of a common satellite ground station for designated BMDS elements.
- Operation of the BMD Network Operations and Security Center (NOSC) for the MDA enterprise.

COOPERATIVE PROGRAMS AND ALLIED SUPPORT:
Cooperative Programs and Allied Support (CF) are responsible for directing the development and execution of MDA international acquisition programs. These efforts include programs, projects and activities with U.S. industry, allied governments and foreign industry. Cooperative Programs and Allied Support manages and directs international acquisition plans and programs. Additionally activities include conceptualization of new programmatic initiatives and development and execution of the Multinational BMD Conference.

INFORMATION MANAGEMENT SYSTEM:
Information Management System is responsible for the development, implementation, and operation of the BMD Information Management System, which includes decision support and collaboration tools, for both mission and business areas of the BMD enterprise.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
SE&A/TSE	200,660		
RDT&E Articles (Quantity)			

Starting in FY 2004, the System Engineering efforts resides in the BMD Core Program Element (0603890C).

SE&A/TSE conducts architecture and systems trade studies; investment analysis studies; special studies on system, element and component capabilities and performance; adversary capabilities parametric analyses; and performs collaborative design analyses. Engineering requirements and support for verification activities in the BMDS Test Bed are provided. SE&A/TSE conducts annual exchanges between the CM/CCM Program's adversary and BMDS teams to assess and improve BMDS performance against countermeasures. The MDA CM/CCM Program consolidates similar efforts being conducted by the Element Programs and associated funding into a single SE&A activity. SE&A/TSE executes a Corporate Lethality Program to support effective intercepts and establish collateral effects.

BLOCK 2004:
FY 2003 Accomplishments:
- Produced the System Evolution Plan (SEP) that describes the content of the BMDS development program.
- Produced the Block System Capability Specification (SCS) that describes the BMDS in terms of functions and performance-based capabilities, shows the allocation of those capabilities to the Elements in the BMDS, and identifies the method of verification for capabilities at the system level.
- Produced the Block Element/Component Capability Specification (ECS/CCS) that describes a BMDS element in terms of functions and performance-based capabilities that are allocated in, and are traced directly to the SCS. The ECS allocates these characteristics to major subsystems of the element with the result being a complete description of the element.
- Delivered the Block Interface Control Specifications (ICS) that describes BMDS interfaces and contains the requirements to establish and maintain the compatibility between interfacing systems or components.
- Delivered the Block System Integration Strategy (SIS) that guides the system integration and testing of the BMDS and its Elements. The purpose of the BMD SIS is to determine the optimum BMDS functionality and operability and to optimize testing of the synthesized architecture (both BMDS and non-BMDS elements that may require modification to meet BMDS requirements).

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

- Delivered Red Team countermeasure conceptual design
- Delivered Black Team countermeasure conceptual design
- Delivered Blue Team counter-countermeasure plan against Red and Black Team countermeasures

BLOCK 2006:
FY 2003 Accomplishments:
- Delivered Block SCS
- Delivered Block ECS/CCS
- Delivered Block ICS
- Finalized specifications for Forward Based Radar
- Reviewed multiple candidates for Block architecture
- Competed alternatives for BMDS Block architecture
- Reviewed and approved Block program definition
- Updated the TOG
- Updated the ACD
- Updated the SEP
- Delivered Red Team countermeasure conceptual design
- Delivered Black Team countermeasure conceptual design
- Delivered Blue Team counter-countermeasure plan against Red and Black Team countermeasures

BLOCK 2008:
FY 2003 Accomplishments:
- Completed conceptual design for Block and BMDS elements
- Developed specifications for KE Boost Interceptor
- Updated the TOG
- Updated the ACD
- Updated the SEP

BLOCK 2008+:
FY 2003 Accomplishments:
- Updated the TOG
- Updated the ACD
- Updated the SEP

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

	FY 2003	FY 2004	FY 2005
Advanced Systems	79,482		
RDT&E Articles (Quantity)	10		

PROJECT HERCULES:
Beginning in FY 2004, funding for the Hercules Project will reside in the new BMDS Products Program Element (0603889C), Project 1010 (BMC2).

- Developed a prototype decision architecture; the application of advanced decision theory to future BMDS command, control & battle management concepts.
- Initiated development of a BMDS Fusion Toolbox for real-time fusion of distributed sensors. Initial demonstration of this toolbox will be in December of 2002
- Completed development and testing of five advanced midcourse algorithms
- Continued Development of an additional 40 decision and discrimination algorithms to enhance BMDS effectiveness
- Developed a radar and optical clutter mitigation architecture
- Planned flight experiments for evaluating the clutter mitigation architecture and validation of clutter models

Project Hercules Block 2004-2006: The initial focus of Project Hercules has been midcourse discrimination for the Ground Based Midcourse Element. In FY 2002, Project Hercules expanded its scope to include all phases of missile flight and the decision architecture. In FY 2003, Project Hercules will continue the spiral-development and testing of these key capabilities leading to maturation and integration into the BMDS. Activities include models, delivery and testing of Discrimination Algorithm (DA) prototypes, BMDS fusion Toolbox demonstration, BMDS Model support, post-flight-test data analysis in support of IFTs, the continuation of planning flight experiments for evaluating the clutter mitigation architecture, and validation of clutter models.

ADVANCED SYSTEMS INNOVATION CELL (ASIC):
Beginning in FY 2004, funding for the ASIC effort will reside in the BMD Technology Program Element (0603175C), Project 6010, Advanced Technology.

- Processed over 150 innovative concepts and proposals in a formal scientific, and engineering, peer review process; prepared briefings, and presented decision briefings to MDA senior leadership.
- 7 innovative concepts selected for further investigation and were put forth as POM initiatives.
- Currently funded 2 proposals with FY 2002 AS funding.
- Provided a form for unique unsolicited proposals from concerned Citizens to make a contribution to missile defense.

The ASIC evaluates all internally and externally generated advanced concepts to prove their viability and maintains cognizance over leading edge concepts that could contribute to evolutionary and revolutionary BMD capability enhancements. It is the ASIC team's goal to release an annual Broad Agency Announcement each October and to have each concept the Agency receives reviewed within sixty days.

SMALL BUSINESS & INNOVATIVE RESEARCH (SBIR) EVALUATION:
Beginning in FY 2004, funding for SBIR Evaluation effort will reside in the BMD Technology Program Element (0603175C), Project 6010, Advanced Technology.

- Established formal Tri-service review group
- Offered 21 new SBIR solicitation topics
- Evaluated over 3000 SBIR proposals
- Recommended 28 proposals for Phase I contract
- Recommended 5 Phase I contracts for Phase II contract
- Leveraged BAA topics and Project Hercules into the current SBIR solicitation

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

The SBIR Evaluation team leads the development of SBIR/STTR topics, the evaluation, assessment, and recommendation of SBIR/STTR proposals, and monitors SBIR/STTR contracts and the integration of their products into MDA and MDA/AS programs and thrusts.

	FY 2003	FY 2004	FY 2005
Intelligence Systems Threat	11,502		
RDT&E Articles (Quantity)			

Beginning in FY 2004, funding for the Intelligence Systems Threat effort will reside in the BMD Core Program Element (0603890C).

Serve as MDA's liaison to the intelligence community and provide current and projected intelligence information to support all MDA activities. Produce the BMD Threat Assessment, specialty threats, targets analyses intel-based and capabilities-based threat scenarios, and provide management and planning support. MDA/IN supports missile defense developers with a foundation of DIA validated ballistic missile threat data. The foundation consists of: databases, missile system studies, and level 1 (engagement), level 2 (lethality), and level 3 (test target design) missile system studies. As examples:

Database include
--Characteristics
--Performance
--IOC & service life
-- Payloads
--Countermeasures
--Force levels
--Proliferation
--Radar and infrared signatures

SCENARIOS
2003 Accomplishments:
--ACD Conceptual Threat Systems, Intell-Based Systems
--Middle East Crisis Scenario (MECS) 2006
--MDEx threat support
--BPEx 02-3 threat support
--Integrated Missile Defense Experiment (IMD) II threat scenario
--GMD Sim 02A threat support
--HWILT threat support
--Test Bed- threat specs

2004 Planned:
Not Applicable. In FY 2004, this effort is funded in PE 0603890C.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

	FY 2003	FY 2004	FY 2005
Joint Warfighter Support	19,885		
RDT&E Articles (Quantity)			

Beginning in FY 2004, funding for this effort will reside in the BMDS Products Program Element (0603889C), Project 1010, C2BC.
FY 2003 Accomplishments:
Block 2004:
- Developed preliminary IMD CONOPS for the BMDS.
- Developed TTP and ROE to integrate BMDS elements into Operational Community.
- Developed and coordinated deployment of BMDS initial defensive operations.
- Interfaced and coordinated BMDS issues with Services, Joint Staff and Allied Forces.
- Explored emerging BMDS and BMC2 concepts/options through studies, seminars, SWARFS, workshops, tabletops, wargames and exercises using the JNIC as the hub.
- Managed Board of Directors process to support Service integration and transition.
- Constructed BMDS curriculum to build knowledge base with Combatant Commanders senior warfighters.

	FY 2003	FY 2004	FY 2005
Joint National Integration Center	43,748		
RDT&E Articles (Quantity)			

Beginning in FY 2004, funding for this effort will reside in the BMDS Products Program Element (0603889C), Project 0204, JNIC.

The FY 2003 funding provided a core capability, operational support, limited modernization of infrastructure, and personnel. The core capability provided a limited corporate knowledge base comprised of leading technical experts with the capability to respond quickly to customer requirements in the areas of Integrated Missile Defense Analysis, Exercise Support, the Multi-Mission Integration Cell, Wargames, and the Missile Defense Wargame and Analysis Resource (MDWAR). The Operational support provided a secure facility and infrastructure encompassing computers, communications, networks, environmental support, Testbed environments and other capabilities essential for the execution of MDA programs and activities. Limited modernization provided for minor infrastructure upgrades and limited upgrades to selected information technology capabilities throughout the JNIC. Planned modernization was deferred to support growing missions resulting in a degradation of infrastructure and information management system support. The personnel and support category provided a well-trained, highly qualified, government and civilian presence to ensure execution of the JNIC mission in support the MDA. The FY 2003 funding levels allowed the JNIC to continue maintaining these programs at the level of FY 2002 and again with limited modernization.

	FY 2003	FY 2004	FY 2005
Cooperative Program and Allied Support	2,285		
RDT&E Articles (Quantity)			

Provided the forum to introduce countries and international organizations to the value-added of missile defense in cooperative programs and capabilities by providing protection to their selected critical assets as well as potentially providing support to the international community. These efforts included development and evaluation of non-U.S. operational concepts created in conjunction with supported country as well as evaluation of system and architecture performance. Efforts included but are not limited to bilateral, unilateral and multi-lateral examinations of U.S. and foreign assets in extended air defense scenarios. Provided the basis for developing potential foreign military sales opportunities.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

	FY 2003	FY 2004	FY 2005
Information Management System	32,020		
RDT&E Articles (Quantity)			

Beginning in FY 2004, funding for this effort will reside in the new BMD Core Program Element (0603890C).

Develop, implement, and operate the MDA Information Management System. Includes decision support and collaboration tools for both mission and business areas of the MDA enterprise.

In FY 2003, efforts included, but was not limited to the following: Complete WAN modernization and compliance with DoD guidance; Transfer BMDO network circuits to service approved networks; Consolidate VDC network and BMDONet maintenance; Design WEB exchange with remote access capability; Develop BMD WAN architecture for enterprise applications; Implement WIN 2000 enterprise; Implement classified remote access capability (VPN); Complete the upgrade of VDC circuits and servers to accommodate associative neuro-networking technology; Complete establishment of Single BMD Web portal; Establish Bulk Email Process; Negotiate with NWAS to link their database card catalog to Data Centers Program; Develop Enterprise IM/IT System Strategy; Upgrade Oracle 8I to Facilitate Web Integration; Update infrastructure for transparent/selective access, BMDO Internal Net, BMD Extranet, and Merge Internal/External nets.

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing

D. Acquisition Strategy

SE&I will implement the MDA's capability-based acquisition strategy that emphasizes testing, spiral development, & evolutionary acquisition through the use of two-year capability blocks.

To bring about the transition to a BMDS, MDA has created the Missile Defense National Team System Engineering and Integration (MDNTS) and the Missile Defense National Team Battle Management/ Command and Control (MDNTB). The MDNTS 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. The strategy is for the Missile Defense National Team System Engineering & Integration (MDNTS) is to ensure successful development of the BMDS through system definition & analyses, capability allocation, block integration, and verification. The execution of detailed systems engineering and integration is a collaborative effort that is achieved via integrated product teams comprised of individuals from each component of the MDNTS.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Advanced Systems										
Advanced Systems	Various	LMMC/Sparta/SMDC / Boeing/JHU/APL/ONR	30,506					CONT.	30,506	
Subtotal Product Development			30,506	0		0		0	30506	

Remarks

II. Support Costs Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SE&A/TSE										
MDNTS (I)	CPAF	Boeing/ VA	11,757					CONT.	11,757	
Corporate Lethality Prgm	Various	Various	7,600					CONT.	7,600	
CM/CCM	Various	Various	1,600					CONT.	1,600	
SETA Support	CPFF	Sparta/ VA	6,485					CONT.	6,485	
SETA Support	CPFF	CSC/ VA	5,792					CONT.	5,792	
SETA Support	Various	VRI/ VA	1,515					CONT.	1,515	
SETA Support	CPFF	SAIC/ VA								
Advanced Systems										
Advanced Systems	Various	Various	20,000						20,000	

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Intelligence Systems Threat										
Army Intel Support	MIPR	NGIC, SMDC	1,650						1,650	
Air Force Intel Support		NAIC	870						870	
Program Support		SMDC/ AL	4,000						4,000	
App Support		SPC/ CO	2,480						2,480	
Scenario Pro		MDA/ VA	2,202						2,202	
Wargaming Support		SPC/ CO	300						300	
Information Management System										
Enterprise Info Mgt	MIPR	AMSC/ AL	3,171						3,171	
Enterprise Info Mgt	MIPR	MDDC/ AL	5,593						5,593	
Enterprise Info Mgt	MIPR	JNIC/ CO	2,264						2,264	
Enterprise Info Mgt	MIPR	FEDSIM/ VA	740						740	
Enterprise Info Mgt	CPFF	DRC/ VA	1,114						1,114	
Enterprise Architecture & Eng	BPA	SRA/ VA	4,065						4,065	
Enterprise Architecture & Eng	MIPR	DISA/ VA	1,397						1,397	
Enterprise Info Mgt	Various	Various	2,556						2,556	
Enterprise Architecture & Eng	CPAF	NG	7,153						7,153	

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Joint National Integration Center										
JNIC Utilities		50 Space Wing/ CO	906						906	
Subtotal Support Costs			95,210	0		0		0	95210	

Remarks

III. Test and Evaluation Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Joint Warfighter Support										
Combatant Commanders Experim	Other	Theatre Combatant Commanders	15,175					CONT.	15,175	
Joint National Integration Center										
JNIC	C/CPAF	Northrop Grumman/ CO	34,384						34,384	
Advanced Systems										
Advanced Systems	Various	SMDC/ AL								
Subtotal Test and Evaluation			49,559	0		0		0	49559	

Remarks

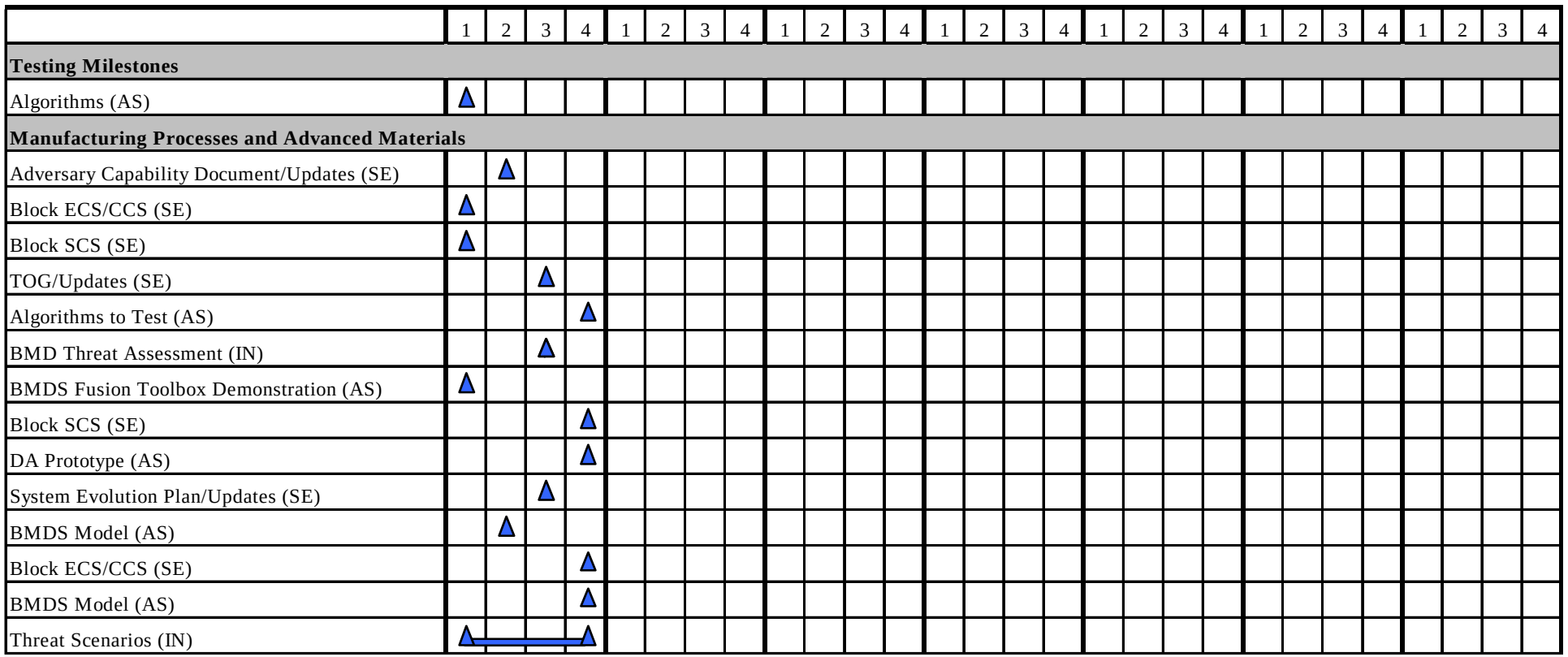
MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

IV. Management Services Cost ($ in Thousands)

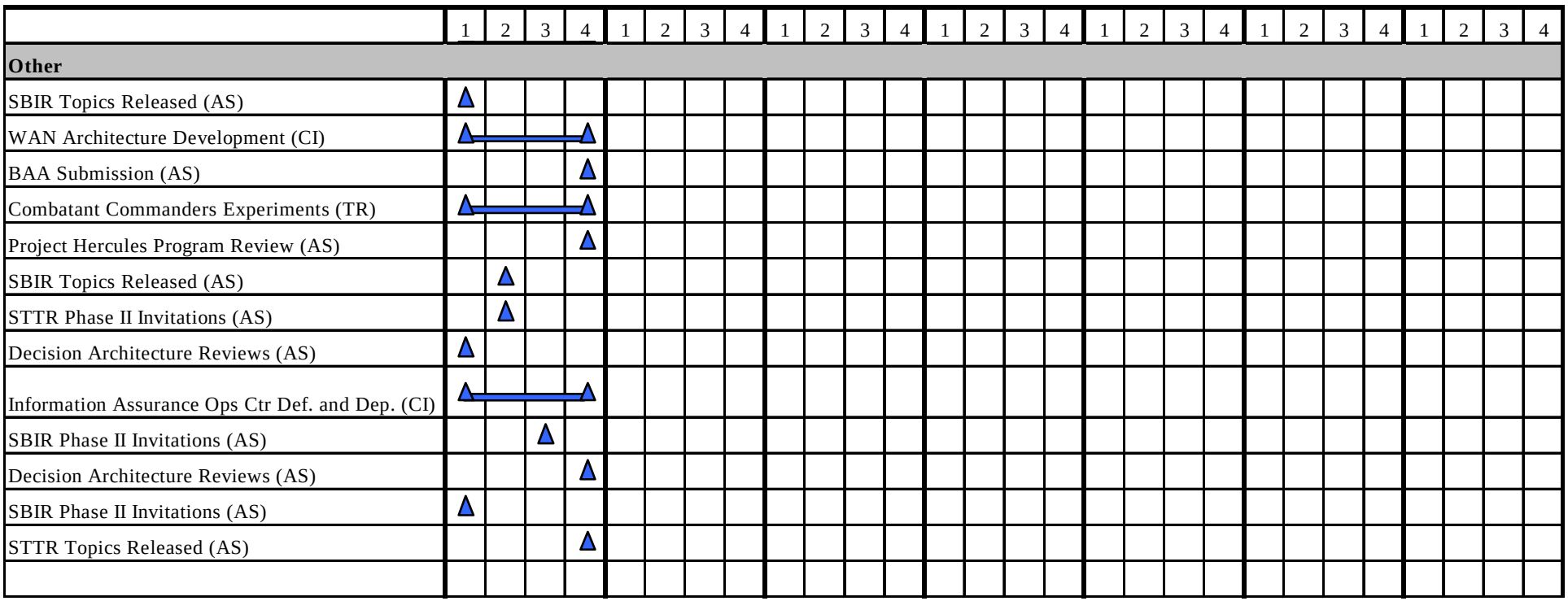
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SE&A/TSE										
FFRDC/UARCs/DOE Labs	MIPR	Various	26,595					CONT.	26,595	
Government Personnel Spt		WHS/ Washington, DC	22,182					CONT.	22,182	
Travel		Various	595					CONT.	595	
Advanced Systems										
Advanced Systems	Other	CSC/ SMDC	3,484					CONT.	3,484	
Joint Warfighter Support										
Support Contracts	MIPR	CSC, Vanguard, Sparta/ VA	3,170					CONT.	3,170	
Joint National Integration Center										
JNIC		JNIC/ Colorado Springs, CO	3,305						3,305	
JNIC		USN, Naval Research Laboratory/ Colorado Springs, CO	926						926	
JNIC	CPAF	Vanguard Research, & ARINC/ Colorado Springs, CO	2,915						2,915	
JNIC	MIPR	Mitre Corp/ Colorado Springs, CO	1,312						1,312	
Cooperative Program and Allied Support										
CF Program Support	CPFF	Sparta/ Various	937					CONT.	937	
Information Management System										

MDA Exhibit R-3 RDT&E Project Cost Analysis									Date: February 2004	
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Ent. Plans Policies & Analyses	CPFF	EMC/ CA	2,929					CONT.	2,929	
Ent. Plans Policies & Analyses	Various	Various/ VA	1,002						1,002	
Subtotal Management Services			69,352	0		0		0	69352	
Remarks										
Project Total Cost			244,627	0		0			244,627	
Remarks										

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones							
Algorithms (AS)	1Q,4Q						
Manufacturing Processes and Advanced Materials							
Adversary Capability Document/Updates (SE)	2Q						
Algorithms to Test (AS)	1Q						
Block ECS/CCS (SE)	1Q						
Block SCS (SE)	1Q						
Government Verification Management Plan (SE)	1Q						
TOG/Updates (SE)	3Q						
Algorithms to Test (AS)	4Q						
BMD Threat Assessment (IN)	3Q						
BMDS Fusion Toolbox Demonstration (AS)	1Q						
Block SCS (SE)	4Q						
DA Prototype (AS)	4Q						
Reviewed and approved Block program definition (SE	4Q						
System Design Review (SE)	1Q						
System Evolution Plan/Updates (SE)	3Q						
BMDS Model (AS)	2Q						
Block ECS/CCS (SE)	4Q						
Specifications for KE Boost Interceptor (SE)	3Q						
System Design Review (SE)	3Q						
BMDS Model (AS)	4Q						
Threat Scenarios (IN)	1Q-4Q						
Other							
Algorithm Handover Meetings (AS)	1Q						
SBIR Topics Released (AS)	1Q						
WAN Architecture Development (CI)	1Q-4Q						
Algorithm Handover Meetings (AS)	2Q						
BAA Submission (AS)	4Q						
Combatant Commanders Experiments (TR)	1Q-4Q						
Project Hercules Program Review (AS)	4Q						

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
SBIR Topics Released (AS)	2Q						
STTR Phase II Invitations (AS)	2Q						
Algorithm Handover Meetings (AS)	3Q						
Decision Architecture Reviews (AS)	1Q						
Information Assurance Ops Ctr Def. and Dep. (CI)	1Q-4Q						
SBIR Phase II Invitations (AS)	3Q						
Algorithm Handover Meetings (AS)	4Q						
Decision Architecture Reviews (AS)	4Q						
SBIR Phase II Invitations (AS)	1Q						
STTR Topics Released (AS)	4Q						

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
1060 Test & Evaluation	340,570	0	0	0	0	0	0
RDT&E Articles Qty	9	0	0	0	0	0	0

Note: Beginning in FY 2004, The funding for this effort is moved to the Ballistic Missile Defense Test & Targets Program Element (PE 0603888C) and the Ballistic Missile Defense System Core Program Element (PE 0603890C).

A. Mission Description and Budget Item Justification

In FY 2003 the Test & Evaluation (T&E) Project consolidated all System-wide T&E resources. This supported cohesive facilitation, management and execution of these test activities for a single, integrated BMD System. The T&E project provided the test infrastructure and analytical tools needed by the Missile Defense Agency (MDA) to execute a System-Wide Test Program. Element-unique T&E costs were captured in the respective BMDS element.

MDA's testing needs expanded beyond those of the individual BMDS elements. To address this issue, the Responsible Test Organization and the Combined Test Force (RTO and CTF) were initiated to provide a single point of responsibility, authority, and accountability for BMD System testing. The RTO draws together test planning and reporting, corporate range infrastructure, environmental planning, provisioning and mission assurance. It also establishes common, repeatable processes and procedures for test planning. The CTF serves as the execution arm of the RTO focusing on the execution of system-level tests. The CTF is responsible for the long range planning, detailed planning, and reporting of all system-level testing that verifies BMDS capabilities and all Measurements testing.

The BMDS Test Program provides for a cohesive program of testing to include: System Integrated Flight Tests (SIFTs); integration of system objectives onto Element flight tests, the Missile Defense Integrated Exercises (MDIEs), and the Integrated Missile Defense (IMD) Wargames. The BMDS Test Program provides for characterization of BMDS performance as input to block assessments. SIFTs are designed to: measure BMDS integration, assess BMDS capabilities, and provide truth data and validation data for models and simulations. The MDIE utilizes the Missile Defense System Exerciser (MDSE) Hardware-in-the-loop (HWIL) to stimulate system elements. These exercises are designed to perform system capability assessments, measure interoperability, provide verification of element interfaces, and provide initial integration and test of block upgrades. The Missile Defense Wargame Analysis Resource (MDWAR - formerly Wargame 2000) is an Operator-in-the-Loop test tool which supports assessment of BMDS capability and development of BMDS operating concepts. In FY03, the BMDS Test Program imposed system-level objectives onto Element flight tests to support Initial Deployment Operations (IDO) and Block 04 assessments, initiated planning for SIFTs, and conducted MDIE and IMD Wargame exercises. To support the BMDS Test Program development, program objectives, and performance characterization, MDA T&E also provides resources to support mission planning, data collection, analysis, and exploitation for Observation Island and Graystar.

The BMDS Measurements Program is an integrated test program defined and established to ensure a coherent, complete, cost effective, and disciplined approach to collecting data/measurements to support characterization of the BMDS mission space. Under the Measurements Program, all MDA measurement requirements which support Block Characterization, Threat Characterization, M&S Validation, Phenomenology, Advanced Concepts, Lethality, Kill Assessment, and Special Tests are collected, prioritized and validated by the Measurements Program Assessment Team (MPAT). Once validated, requirements are allocated to Tests of Opportunity (either Auxiliary Sensor Participation or Piggyback Operations) or used to design the dedicated flight tests (which will all be designated as ?Critical Measurements and Countermeasure? (CM/CM) flight tests after FY04). In FY03, the ASFT and ADE flight test campaigns were executed under the Measurements Program. The ASFT objectives were: CM characterization including signatures and phenomenology to support discrimination algorithm development and model validation for Project Hercules; and determining the feasibility and efficacy of CMs. The Aerial Dispersion Experiment (ADE) test was designed to characterize debris dispersion and footprint after ground impact of four liquid propelled rockets. The Lethality and Kill Assessment Test Programs leverage BMD intercept tests of opportunity to characterize post-intercept remnants. This characterization is essential to maintain and improve the core lethality models: PEELS, KIDD, and PEGEM and to identify successful intercepts, perform ground effects analysis, support systems engineering assessments, and facilitate development of real time decision tools to support tactics and engagement doctrines. To support the Measurements and BMDS Test Program development, program objectives, and performance characterization, MDA Test and Evaluation provides resources to support the Data Collection, Analysis, and Exploitation activities of the Optical Data Analysis (ODA), and Radar Data Analysis

(RDA) groups. These groups perform various functions which support BMDS data collection objectives (mission planning, sensor execution, data analysis), explore phenomenology to improve future BMDS systems and new mission areas, and provide characterization and assessment for Measurements and BMDS testing.

The Test Resources Program provided the resources for the development, sustainment, and modernization of core corporate T&E infrastructure facilities of the BMDS Test Bed to support system and element-level testing. This included support at BMD-unique ground test facilities:

- Kinetic Kill Vehicle Hardware in the Loop Simulator (KHILS) at Eglin AFB in Fort Walton Beach, FL
- Arnold Engineering and Development Center (AEDC) Hypervelocity Wind Tunnel Number 9 (Tunnel 9) at White Oak, MD
- Infrared and Blackbody Standards at the National Institute of Standards and Technology (NIST) in Gaithersburg, MD
- Hypervelocity Ballistic Range G Light Gas Gun Von Karman Facilities (VKF) at AEDC in Tullahoma, TN
- 7V and 10V Space Chambers at AEDC, Tullahoma, TN
- National Hover Test Facility (NHTF) at Edwards AFB, CA
- Army Missile Optical Range (AMOR) at Redstone Arsenal, AL
- Aero-Optic Evaluation Center (AOEC) at Calspan-University of Buffalo Research Center (CUBRC), NY
- Holloman High Speed Test Track (HHSTT) at Holloman AFB, NM

BMD-unique range assets at various DoD test ranges:
- White Sands Missile Range (WSMR) in Las Cruces, NM including Ft. Wingate Launch Complex near Gallup, NM
- Reagan Test Site (RTS) at the United States Army Kwajalein Atoll
- Pacific Missile Range Facility (PMRF) and Kauai Test Facility (KTF) at Kauai, HI
- Wake Island Air Station Launch Complex
- Naval Air Warfare Center, Weapons Division, Pt Mugu, CA
- Kodiak Launch Complex (AADC)
- Vandenburg Air Force Base
- Wallops Island

Airborne sensors, data collection assets, and special test equipment included:
- High Altitude Observatory I (HALO-I)
- High Altitude Observatory II (HALO-II)
- Wide-body Airborne Sensor Platform (WASP)
- Sea-Lite Beam Director (SLBD), based at White Sands Missile Range, Las Cruces, NM
- Remote Area Safety Aircraft - P-3s

All of these assets provided valuable program risk reduction and test implementation capability in support of BMDS activities. Individual BMDS elements paid only the direct costs associated with their specific test efforts. Recommended test infrastructure improvements resulting from the FY 2002 Test Bed Infrastructure Study and the on-going Target Requirements Study were also implemented through the Test Resources Program. The Test Resources effort also supported the development of target requirements and the certification that targets satisfy test objectives.

The core Modeling and Simulations (M&S) Program provided for the development, maintenance, upgrades, verification and validation integrated into evolutionary block upgrades for new capabilities and spiral development within the block to support the acquisition strategy. BMD System core models included the engineering, phenomenology, threat, lethality, scene generation, and multi spectrum data products required to validate these tools in common and general use in all elements of the BMDS. Hardware in the Loop (HIL) Tools supported MDIE Exercises for engineering,

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

development, and test of BMDS integration and interoperability. Operator in the loop tools supported wargaming exercises and the development of Concepts of Operations (CONOPS) and Tactics, Techniques and Procedures (TTPs). Highly aggregated construction models along with medium and high fidelity construction models provided the capability to conduct long, medium, and short term BMD studies, analysis, trade space options, doctrine development, logistics support and feasibility studies. This project also funded the development of applicable standards, improved automated support tools, information assurance, vulnerability assessments, a standards-based V&V program, improved conceptual models, implementation of the High Level Architecture, and verification, validation, and accreditation activities required to ensure credibility of the analytical tools. The International M&S Program supported over 15 international initiatives including the Israel Arrow Program. Programs such as a Russian Cooperative Modeling and Simulation program are also funded within this project.

The Facilities, Siting and Environmental program provided guidance, environmental impact analyses and documentation, real property facility siting, acquisition, and facility operational support for the BMD systems. This project planned, programmed, budgeted, and provided oversight to facility acquisition through the Military Construction (MILCON) and RDT&E construction programs. This project provided guidance and supported Environmental Safety and Occupational Health (ESOH) Programs, including the Environmental Assessment and Environmental Impact Statement process, environmental compliance, pollution prevention, and other environmental efforts. This project provided leadership and consultation to facilitate environmental stewardship and compliance of all BMDS activities with federal, state, local, DOD and international last treaties and regulations.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
System Test & Assessment	110,730		
RDT&E Articles (Quantity)	6		

FY 2003 RDT&E Articles: Two (2) Black Brant XI missiles for ASFT, Four (4) liquid propelled rockets for ADE

FY 2003 Accomplishments:

The BMDS Test Program includes Missile Defense Integrated Exercises (MDIEs), the System Integrated Flight Tests (SIFTs), and the Integrated Missile Defense (IMD) Wargames.
- Planned System-level participation in Aegis BMD Flight Mission 6.
- Imposed System-level objectives onto IFT-9 and IFT-10 to support IDO/IDC and Block 2004 assessments.
- Initiated planning for SIFTs to support Block 2004 assessments.
- MDIE program conducted pathfinder ground testing geared to supporting pre-IDC/IDO testing.
- MDIE program performed interactive test planning activities for pre-IDO/IDC testing.
- Expanded MDSE to Block 2004 System Elements.
- Continued US-Israeli interoperability testing and development of a US/Russian Federation Cooperative M&S Initiative.
- Planned, executed and reported IMD 03-1 & 2 Wargames.
- Planned IMD 04 Series Wargames.
- Supported data collects by Observation Island and Gray Star missions.

BMDS Measurements Program Accomplishments included:

- Completed execution of the Aerial Dispersion Experiments (ADE) with successful launch of four missiles.
- Successfully completed execution of the Advanced Systems Flight Test (ASFT) in May/June 03. Conducted analysis and exploitation of data for release to users.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

- Conducted test planning for future BMDS Measurements Program flight test campaigns including CMCM-1. These missions incorporated requirements for: Systems Engineering assessments and ground effects analysis; improved Scene Generation, updated threat models, discrimination algorithm development and model validation; and assessment, characterization, feasibility and efficacy of countermeasures/counter-counter measures along with element or system degradation assessment.
- The Lethality Test Program continued monitoring the lethality Ground and Live Fire Test and Evaluation activities associated with various program elements, and designing flight test experiments leveraging BMD intercepts for the collection of lethality ground effect data to improve the System Lethality models.
- The Kill Assessment Test Program developed Impact Database for U.S. and Arrow Programs, developed Impact Model for Optical Energy, and made multiple field data collections.
- Supported data planning, collection, and analysis of optical and radar data, and explored phenomenology for critical BMDS missions areas that support enhancements to Strategic Scene Generation Model (SSGM) and development of the Battlespace Environments and Signatures Toolkit (BEST).

	FY 2003	FY 2004	FY 2005
Test Resources	120,833		
RDT&E Articles (Quantity)	3		

FY 2003 RDT&E Articles: Two (2) Lance Targets for use in Mobile Launch Platform Demonstration; complete Development of HALO-II

FY 2003 Accomplishments

- Continued to maintain the core test infrastructure (Ground Test Facilities, Airborne Sensors, Test Ranges).
- Conducted MDA-Wide study to identify the test infrastructure needed to support the BMDS Test Bed and developed an investment plan to support the element BMDS Block Build.
- Incorporated the Data Centers Programs as part of the core test infrastructure to support BMDS data/knowledge management, access, and distribution of all BMDS test, experiment, and large-scale M&S exercise data.
- Successfully conducted multiple airborne sensor data collection missions in support of the BMDS with the HALO-I platform.
- Successfully completed Initial Operation Capability (IOC) of the HALO-II airborne sensor platform and conducted data collection missions in support of the BMD system and element level testing.
- Continued the development of the Wide-body Airborne Sensor Platform (WASP) airborne sensor system to support IR and visible data collection for BMDS system and element testing. Successfully conducted system integration lab testing and sensor support hardware and software including communication and data link testing.
- Completed Phase 1 of the Mobile Target Launch Capability (MTLC) study. Defined "high-level" requirements for and technical BMD system test benefits of a mobile target sea-launch capability. Phase 2 will be an analysis of potential sea-launch platform options.
-Conducted a Mobile Launch Platform (MLP) Proof-of-Principal demonstration. Successfully launched two Lance missiles from the MLP demonstrating that the MLP can be towed to a launch point and conduct target launch operations.
- Pacific Range Support Team (PRST): In close coordination with each of the participating DoD test ranges, chartered the PRST. The PRST formally teams the Pacific ranges in providing comprehensive, coordinated test range support for BMD system testing across the ranges.
- Range Safety Standardization Program: Developed the framework and sponsored the working groups under which the DoD ranges supporting BMD system testing will develop a single range flight safety process and procedures across the ranges to be utilized for BMD system testing. This will reduce MDA testing risks by eliminating the need to develop and procure multiple flight safety systems to comply with multiple range standards.
- Transportable Telemetry Systems (TTS): Defined MDA requirements for transportable telemetry systems to support BMD system testing - Funded procurement of two systems.
- Incorporated the electro-optical sensor capabilities of the Innovative Science and Technology Experimentation Facility (ISTEF), located at Cape Canaveral, FL, to assess plume phenomenology of boosting rocket systems
- Develop working relationship with AADC to maintain KLC for MDA testing and support MDA target launches.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

	FY 2003	FY 2004	FY 2005
Modeling & Simulation	103,896		
RDT&E Articles (Quantity)			

FY 2003 Accomplishments

- Developed and maintained a validated set of System Core models and simulations (M&S) and M&S support activities
- Maintained the Advanced Research Center/Simulation Center (ARC/SC) and the MDA Data Centers in direct support of the System-Wide Test Program, System Engineering Program, BMD Architecture development, Project Hercules, Joint Warfighter wargaming, National Teams, and international Cooperative M&S efforts.
- Continued to mature legacy environment and signature software codes for BEST.
- Continued the Lethality M&S development upgrade in concert with the CLP.
- Expanded International collaborative M&S initiatives with international cooperative agreements.

	FY 2003	FY 2004	FY 2005
Facilities, Siting & Environmental	5,111		
RDT&E Articles (Quantity)			

FY 2003 Accomplishments

Provided environmental program guidance, compliance, planning and NEPA support, real property facility, acquisition, facility operations, and maintenance/repair support for the BMDS.
- Planned, programmed, budgeted, and provided oversight to facility acquisition through the Military Construction (MILCON) and RDT&E construction programs
- Initiated Programmatic Environmental Impact Statement (PEIS) and conducted public scoping hearing
- Finalized 26 Environmental Documents
- Responsible for the management and oversight of facility, planning, design and construction activities valued at over $420 million to support the BMDS IDC and Increase Range Infrastructure to support BMDS test and development

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing

D. Acquisition Strategy

The Deputy for Test and Assessment will acquire and execute a BMD System Level test and assessment program to support the Missile Defense Agency's layered defense concept. This layered defense concept (to defeat threats in boost, midcourse, and terminal phases) is achieved by land-based, sea-based, air-based, and space-based capabilities. The development of the BMDS includes the fielding of a BMDS Test Bed in September 2004. The Test Bed not only provides for continued development and testing of the BMDS, but also provides inherent Initial Defensive Capability (IDC) that enables Initial Defensive Operations (IDO) on 1 October 2004. The BMDS capabilities are developed in an evolutionary, capabilities-based, spiral development acquisition approach in two-year Blocks that build, verify and offer for deployment specific capabilities every two years starting in 2004.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Beginning in FY04, the MDA Deputy for Test and Assessment will execute the BMDS test and assessment program under a Responsible Test Organization (RTO) and a Combined Test Force (CTF) structure.

The Deputy, TE, as the Director of the RTO, will function as the single point of responsibility, authority, and accountability for BMD System-Level testing. The RTO will perform planning, provisioning, test execution, analysis, and reporting for all BMD System-Level and Measurements Tests. The RTO will have the responsibility to produce a fully integrated MDA test plan, as well as the responsibility to characterize the BMDS Capability based on test results and data. The RTO will collaborate with the elements to achieve a system-level focus in the testing and assessment of the BMDS, and focus the BMDS components towards demonstrating system-level, integrated, layered defense capability.

The CTF is an embedded execution organization within the RTO. The CTF will focus on the execution of system-level tests. The CTF will also be responsible for the long range planning, detailed planning, and reporting of all system-level testing that verifies BMDS capabilities and all Measurements testing. Included are exercises/wargames, Hardware-in-the-Loop (HWIL)/Integrated Ground Tests (IGT), Initial Defensive Operations (IDO) testing, Block 06 system test planning and Block 08 system test planning.

Test and Infrastructure programs will be executed utilizing a diverse acquisition strategy to take advantage of private industry competitive forces and existing DoD agency, FFRDCs, and international coalition partner capabilities. Examples of participants in this acquisition strategy include the U.S. Army Space and Missile Defense Command, Air Force Space and Missile Command, and the U.S. Navy Research Lab.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Product Development										

Remarks

II. Support Costs Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Support Costs										

Remarks

III. Test and Evaluation Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
System Test & Assessment										
System Integrated Flight Tests	Various	Various including USASMDC	9,689						9,689	
Critical Measurements Program	Various	Various	28,203						28,203	
Missile Def Integ Exercises	Various	Various	9,421						9,421	
Special Program Tests	Various	USASMDC/ Huntsville, AL	4,997						4,997	
Radar Exploitation	Various	USASMDC/ Huntsville, AL	2,311						2,311	
Corporate Data Collect & Analy	Various	Redstone Ars, Quantico/ AL, VA	5,128						5,128	
Optical Data Analysis	Various	Various	4,796						4,796	
Radar Data Analysis	Various	Various	3,066						3,066	
Advanced Systems Flight Tests	Various	Various	12,841						12,841	

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
BMDS Wargames	Various	JNIC/ Colorado Springs, CO	3,044						3,044	
Lethality	Various	Various	2,312						2,312	
Kill Assessment	Various	USASMDC/ Huntsville, AL	2,369						2,369	
Arrow-MDSE	Various	Various	2,221						2,221	
International Programs	Various	Various	750						750	
Test Planning	MIPR	Various/ NJ, Wash D.C., TN	587						587	
IFT-10 Pre/Post Analy & Exec	Various	Navy	5,864						5,864	
Test Resources										
Ground Test Facilities	Various	Army & Air Force/ NY, AL, FL, MD, TN, CA, NM	19,044						19,044	
Test Ranges	Various	Various/ HI, NM, Marshall Is	39,487						39,487	
Airborne Sensors	C/Various	Raytheon, Aeromet, Boeing/ CA, OK, WA	50,966						50,966	
Targets Cert & Reqt`s	Various	USASMDC, POET/ HSV AL, Wash D.C.	797						797	
RDT&E Construction		TBD	115						115	
Modeling & Simulation										
International Coop M&S	Various	Various	8,228						8,228	
BMD System Core M&S	Various	Army, JNIC et al/ AL, CO	33,868						33,868	
BMD Eng/Leth M&S	Various	Army, Air Force, Navy	26,183						26,183	
System Model Program Support	Various	Army	6,193						6,193	

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Adv. Res Ctr & Sim Ctr	Various	USASMDC/ Huntsville, AL	10,658						10,658	
High Performance Computing	Various	USASMDC, PEO/ Huntsville, AL	10,576						10,576	
Facilities, Siting & Environmental										
Facilities & Siting	Various	Various	73						73	
Environmental Compliance	Various	Various	75						75	
BMD Prog. EIS	CPFF	ICF/ Arlington, VA	1,577						1,577	
Subtotal Test and Evaluation			305,439	0		0		0	305439	

Remarks

IV. Management Services Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
System Test & Assessment										
Gov`t Personnel & Spt		USASMDC/ Huntsville	3,028						3,028	
Support Contracts	C/FFP	SPARTA, TASC/ CA, MA	9,576						9,576	
TE Travel		MDA/ Wash D.C.	527						527	
Test Resources										
SMDC Govt Personnel		USASMDC/ Hunstville, AL	2,152						2,152	
SETA Support	C/FFP	TASC, SPARTA/ MA, CA	8,272						8,272	

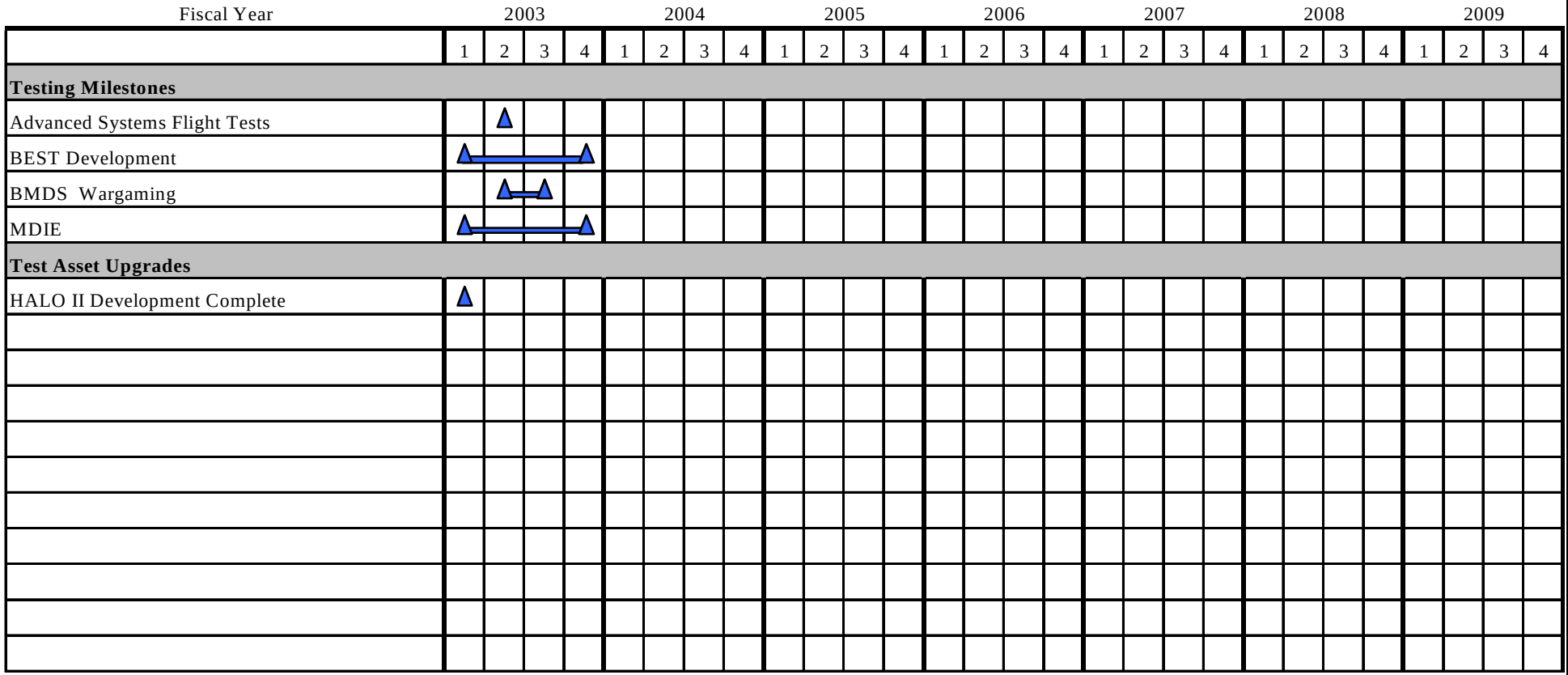
MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Modeling & Simulation										
Gov`t Project Personnel		USASMDC/ Huntsville, AL	1,600						1,600	
Support Contract	FFP	Booz Allen Hamilton et al/ CA	6,590						6,590	
Facilities, Siting & Environmental										
Support Contracts	C/FFP	ICF, SciComm/ VA, MD	3,386						3,386	
Subtotal Management Services			35,131	0		0		0	35131	
Remarks										
Project Total Cost			340,570	0		0			340,570	

Remarks

The Test & Evaluation project distributes the majority of its funding to Executing Agents (i.e. the Air Force, Army, Navy, Joint National Integration Center (JNIC), and DTRA) for further dissemination. These Executing Agents will use Military Interdepartmental Purchase Requests (MIPRs) and/or in-house contract vehicles to accomplish the tasks specified.

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones							
Advanced Systems Flight Tests	2Q						
Aerial Dispersion Experiment (ADE)	2Q-3Q						
BEST Development	1Q-4Q						
Blue Velvet Testing	1Q						
Measurements Programs	1Q-4Q						
Mobile Launch Platform Demonstration	1Q						
BMDS Wargaming	2Q-3Q						
LRALT Characterization	4Q						
MDIE	1Q-4Q						
Studies & Analyses							
Target Roadmap Study	1Q-2Q						
BMDS Supplement. Programmatic Env Impact Statement	1Q-4Q						
Test Asset Upgrades							
HALO II Development Complete	1Q						
Range Safety Standardization Program	1Q-4Q						
Other							
Transfer of Wake Island to Air Force	1Q						

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
1070 Producibility & Manufacturing Technology	17,833	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: Beginning in FY 2004, funding for this effort will reside in the new Ballistic Missile Defense System Core Program Element (0603890C).

A. Mission Description and Budget Item Justification

The Producibility and Manufacturing Technology (MP) program provides manufacturing technologies and implementation strategies that benefit the Ballistic Missile Defense System (BMDS). These include near term insertion programs that demonstrate capabilities for multiple applications across the BMDS encompassing risk reduction, cost reduction/avoidance and performance enhancement. These programs are identified by utilizing systems engineering, analyses, and assessments as a basis for offering potential remediation of a BMDS area of concern. MP provides tools, strategies for improving the processes in support of the spiral development for the BMDS to meet block upgrade goals.

MP serves as the Missile Defense Agency's (MDA) source for industrial reliability, manufacturing, producibility and capability assessments. MP completes assessments and reports to the Director key industrial base issues associated with developing and acquiring missile defense to include identifying gaps in industrial capabilities for component production. MP supports Program Directors/Program Managers in accomplishing manufacturing and industrial investment strategies for system affordability and technology insertion opportunities including utilization of commercial practices and technologies. MP efforts include working with the Services, Industry (Systems Integration Contractor to subsystem vendors) and other government agencies to leverage current and future projects that will lead to more reliable and affordable components to benefit the BMDS.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Producibility	11,776		
RDT&E Articles (Quantity)			

The MDA/MP program identifies and funds projects that address producibility for the near term insertion into the BMDS. This includes sensors, propulsion, and electronics, production improvements and reliability enhancements, and materials that provide a basis for cost reduction activities for the BMDS. The FY 2003 producibility projects include developing composite components; canisters and missile structures; proof of production processes for Advanced Optical Processor (AOP); demonstration of hardware for Very Long Wave Infrared Focal Plane Array (VLWIRFPA); Complete Proof of Production Process for Two Color Infrared Focal Plane Array (Two Color IRFPA); and initial tests for the Angle-Angle Range Intensity (AARI) Laser Radar (LADAR).

FY 2003 Accomplishments:
AARI LADAR - Successfully accomplished field testing of the AAR Ladar at the AMOR facility. Testing resulted in demonstrated operational capabilities. AAR Ladar successfully transitioned BMDS customers (TE and TC) for incorporation into ongoing BMDS efforts.

AOP - Efforts resulted in successful completion of a field demonstration system and completion of the ALCOR test plan. Transition progress was made through an agreement and funding line with MIT Lincoln Labs for future LexDev HWIL integration and test efforts. BMDS Element customers (AS and GMD) and Industry (Lockheed-Martin NESS & MFC, Raytheon) are tracking progress.

VLWIRFPA - Successful manufacturing and producibility efforts resulted in an improved FPA process yield of 10X , from 2% to 20%. Further engineering and analysis discovered radiation life limit for space environment.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Composite Canister - The maturation and validation of material, design, producibility, and fabrication techniques resulted in successful transition. The composite canister has been adopted by Lockheed Martin (LM) for the THAAD. LM is making the necessary capital investments for production of the composite canisters.

Two Color IRFPA - Efforts resulted in the successful completion of Critical Design Review (CDR).

MP continued to identify and assess new projects that address producibility aspects for near term insertion into the BMDS.

	FY 2003	FY 2004	FY 2005
Manufacturing Technology	6,057		
RDT&E Articles (Quantity)			

MDA/MP's objective is to identify and fund manufacturing technologies and processes that benefit the BMDS by engaging in initiatives that reduce the risk and cycle time associated with the transition from R&D to production. Manufacturing technology identifies innovative and proven processes that simplify the manufacturability and improve the reliability of complex BMDS element components. MDA/MP leverages DoD, Services, Government Agencies, and Industry programs to assess these processes and determine the viability and impact to the BMDS. Manufacturing Technology focuses on the reduction of risks, costs, and cycle times associated with the development of BMDS elements. The FY 2003 Manufacturing Technology projects include design and component test risk reduction for midcourse Divert and Attitude Control System (DACS), propulsion, lasers, and radars.

FY 2003 Accomplishments:
DACS - The maturation of a successful design, producibility and testing effort resulted in insertion of Throttleable DACS (TDACS) as an alternate path/risk reduction effort. TDACS successfully transitioned to the Element customer (AEGIS BMD) where an integrated solution is being co-funded and managed by AB, Industry, and MP.

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing

D. Acquisition Strategy

Producibility and Manufacturing Technology adheres to MDA's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. It leverages existing industry and government efforts to include the missile defense elements. This is accomplished by assessing baseline systems, identifying high-risk areas and performing analyses to recommend to the Director what the proper course of action is to improve quality and reliability.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Product Development										

Remarks

II. Support Costs Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Producibility										
AOP		SMDC/ AL	2,513					CONT.	2,513	TBD
2ColorIRFPA		Navy/ PA	2,100					CONT.	2,100	TBD
VLWIRFPA		SAF/AQ/ NM	2,000					CONT.	2,000	TBD
LADAR	MIPR	Fibertek, Inc/ VA	1,000					CONT.	1,000	TBD
Composites/Canisters	Various	Various/ Various	548					CONT.	548	TBD
Producibility	Various	Services/ TBD	309					CONT.	309	TBD
Manufacturing Technology										
DACS		Aerojet/ CA	2,695					CONT.	2,695	TBD
Subtotal Support Costs			11,165	0		0		0	11165	

Remarks

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603880C Ballistic Missile Defense System Segment

III. Test and Evaluation Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Manufacturing Technology										
DACS	Other	Aerojet/ CA	0					CONT.		
Man Tech	Various	Various/ Various	806					CONT.	806	
Subtotal Test and Evaluation			806	0		0		0	806	

Remarks

IV. Management Services Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Manufacturing Technology										
SETA	Various	Sparta, Andrulis/ VA	1,000					CONT.	1,000	TBD
Management Services	Various	Various/ Various	112					CONT.	112	TBD
Producibility										
SETA	Various	Sparta, Andrulis/ VA	1,000					CONT.	1,000	TBD
Subtotal Management Services			2,112	0		0		0	2112	

Remarks

Project Total Cost			14,083	0		0			14,083	

Remarks

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	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
Producibility																												
2ColorIRFPA - Character Test	▲																											
LADAR - AMOR Image Test	▲																											
AOP - Development Specification	▲																											

Project: 1070 Producibility & Manufacturing Technology

MDA Exhibit R-4 (PE 0603880C)

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Producibility							
2ColorIRFPA - Character Test	1Q						
Canister - MANTECH Program for Selected Prototypes	2Q						
2ColorIRFPA - Build 1st FPA on new ROIC	1Q						
LADAR - AMOR Image Test	1Q						
AOP - Development Specification	1Q						
Manufacturing							
DACS - Insertion Polan for Braided C-Sic	3Q						
DACS - Initiate Composite Case for Gas Generator	1Q						

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
1090 Program-Wide Support	39,684	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: Transferred in FY 2004 and out to BMD System Engineering & Integration Program Element 0603887C, BMD Test & Targets Program Element 0603888C, and BMD Products Program Element 0603889C.

A. Mission Description and Budget Item Justification

This project covers personnel and related support costs, statutory and fiscal requirements.

Personnel covers government civilians performing program-wide oversight functions such as contracting, program integration, safety, quality and mission assurance at Missile Defense Agency (MDA), Executing Agents within the US Army Space & Missile Defense Command, US Army PEO Air and Missile Defense, US Navy PEO for Theater Surface Combatants, Office of Naval Research, and US Air Force.

Assistance required to support Missile Defense Agency program-wide management functions is also contained in this project. Typical efforts include cost estimating; audit; technology integration across MDA projects; and assessment of schedule, cost and performance, with attendant documentation of the many related programmatic issues. The requirements for this area are based on most economical and efficient utilization of contractors versus government personnel.

Fiscal Requirements include reimbursable services acquired through the Defense Working Capital Fund (DWCF) such as accounting services provided by the Defense Finance and Accounting Services (DFAS); reserves for special termination costs on designated contracts; and provisions for terminating other programs as required. MDA has additional requirements to provide for foreign currency fluctuations on its limited number of foreign contracts. Also includes funding for charges to canceled appropriations in accordance with Public Law 101-510.

Note that these funds are allocated across multiple Program Elements in accordance with the Fiscal Year 1996 Authorization Act, which directed these funds be allocated to the programs being supported rather than managed from a single source. This structure often makes it difficult to level-fund all PE's while maintaining an orderly fiscal structure for executing the individual Program-Wide Support efforts.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Civilian Salaries and Support	39,684		
RDT&E Articles (Quantity)			

Personnel:
Provides funding for government salaries and benefits at the Missile Defense Agency that are associated with program-wide support.

Management Support:
Funds the contract SETA support costs directly associated with Missile Defense Agency program-wide support organizations. This effort provides the funding for the Missile Defense Agency's executing agents (Army Space and Missile Defense Command, Army PEO-AMD, Air Force, and Navy) including government salaries & benefits, SETA support, and various management/overhead costs.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

Fiscal Requirements:
This effort funds various requirements at the Missile Defense Agency, to include accounting services, special termination costs foreign currency fluctuations, and charges from cancelled appropriations.

IM/IT Operations:
This effort pays for Information Management/Information Technology requirements within the Missile Defense Agency. These requirements are moved to the Management Headquarters Program Element in Fiscal Years 2004-2009.

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603880C Ballistic Missile Defense System Segment**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing