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<b>MDA Exhibit R -2RDT&amp;EBudgetItemJustification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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COST (\$ in Thousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Total PECOst	0	0	483996	522458	604445	628594	703055	706501
0101 System Engineering & Integration	0	0	208048	206320	209436	212972	216911	220588
0201 Command and Control, Battle Management and Communications Core	0	0	15556	16193	68447	83559	87060	89357
0102 Intelligence	0	0	19362	21281	22051	23465	26875	28378
0203 Joint Warfighter Support	0	0	245	1245	3163	3205	3291	3376
0103 Producibility & Manufacturing Technology	0	0	30769	39967	38890	37947	41269	30059
0105 Countermeasures/Counter -Countermeasures (CM/CCM)	0	0	48000	73441	94793	97594	146280	146126
0202 Hercules Core	0	0	24079	22119	21628	21599	22013	25375
0106 Modeling and Simulation	0	0	98173	100199	101881	101650	106151	108060
0104 BMD Information Management Systems	0	0	31364	33161	34378	36562	42759	44300
0602 Program Operations	0	0	8400	8532	9778	10041	10446	10882

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

In FY2002 and FY2003, all of the projects in this Program Element were located in PE0603880C, BMD System, or PE0603882C, Midcourse Defense Segment.

Based on Presidential direction, MDA is developing an initial defensive operational capability that is based on the BMD ST 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 development of a capability -based Ballistic Missile Defense System (BMD S) is built upon core work in Systems Engineering and Integration and Command, Control, Battle Management and Communications (C2BMC). Underpinning these efforts are intelligence support to identify system threats, warfighter support to ensure consideration of military operations, and production/manufacturing technology activities to ensure designed systems are producible by Industry. The engineering design of a BMD S to defeat threats is also dependent upon the identification of threats, system countermeasures and the development of counter -countermeasures, as well as skill vehicle discrimination algorithm development. Additionally, models and simulations are maintained, updated and developed to support the design process through the selection and verification of combinations of sensors, interceptors, C2BMC, and sites. Underlying the ability to communicate and design the BMD S in a distributed environment is The Ballistic Missile Defense information management system.

The Ballistic Missile Defense System Core Program Element provides resources to define and integrate the BMD S capable of defending the United States, deployed forces, friends, and allies. This program element consists of ten projects: System Engineering and Integration (SE&I) Core, C2BMC Core, Intelligence, Joint Warfighter Support, Producibility & Manufacturing Technology, Countermeasures/Counter-Countermeasures (CM/CCM), Hercules Core, Modeling and Simulation, BMD Information Technology, and Program Operations.

The SE&I project provides the overall systems engineering development and integration of the BMD S. 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 BMD S warfighter 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 BMD S.

The BMD S Command, Control, Battle Management and Communications (C2BMC) element is the integrating function across all BMD S elements. It is also the function that integrates the BMD S 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 BMD S capability into a global integrated

UNCLASSIFIED

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---	------------------------------

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BMDScapability. The BMDSC2BMC functionality will mature into Collaborative -Distributed Planning and increased Situational Awareness C2 capabilities that support Engagement Coordination and Integrated Fire Control BMC 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), University Affiliated Research Centers (UARC) and Scientific Engineering and Technical Assistance (SETA) providers, will develop and deliver a flexible integrated BMDSC2BMC.

The Intelligence Project enables MDA to manage, maintain, analyze, assess, and share intelligence data and information related to various missile threats (traditional and non-traditional). With the rapidly changing world situation, these intelligence efforts and information are even more critical than ever before, and they continue to play a key role in missile defense threat analysis and the overall development of a BMD that is responsive to the threat.

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 emergency deployments, integration of SPACECOM/NORTHCOM 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.

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.

Countermeasures/Counter-Countermeasures (CM/CCM) identifies, develops, and demonstrates solutions to improve the performance of missile defense projects against countermeasures suites. This requires a process to identify and prioritize solutions to credible countermeasures for integration into the program, and requires increased robustness in the test program to incorporate testing against a broad range of credible threats. Results of the testing program will result in the development of additional algorithms to mitigate credible threats. To minimize the programmatic impacts resulting from intelligence estimates, the program is transitioning from threat point -design to a capability -based approach. Solutions with potential to improve the capabilities against countermeasures will be incorporated through Blockupgrades into the Midcourse segment (both ground and sea) and will be provided to the overall Ballistic Missile Defense System (BMD) through the Missile Defense Agency (MDA) Red -White-Blue team process.

Project Hercules is a national effort to develop robust detection, tracking, and discrimination algorithms to counter off nominal and evolving missile threats. Hercules is also developing a physics based Decision Architecture which applies advanced decision theory to future BMDS command, control, and battle management (C2BM) concepts. In addition to a general program to develop algorithms useful against targets in all phases of flight, Hercules has specific projects to develop algorithms for forward based sensors, the Decision Architecture, and mitigating countermeasures. Hercules develops algorithms to enhance BMDSElement capabilities in Block 04, 06, 08 and beyond and will provide these algorithms to the BMDSElements for insertion into their respective programs.

Models and Simulations plans, programs, budgets, manages, and executes a comprehensive core modeling and simulation program that characterizes the BMD capability and supports credible decisions with respect to the BMDS. The specific functional responsibilities are: plans, programs, budgets, and manages the development and maintenance of core models and simulations; provides requirements management, configuration management, verification and validation (V&V) for core M&S; supports accreditation decisions for all critical BMDS and element models and simulation applications; develops and promulgates M&S policy, guidance, and best practices; chairs the M&S working group (M&SWG); ensures availability of critical BMDS program data; and develops, sustains, and modernizes M&S infrastructure for the BMDS program to include the Advance Research Center, Simulation Center and other requisite computational facilities.

BMD Information Management efforts improve the management of and access to data, information and knowledge throughout the MDEnterprise. The effort will assist the acquisition of Missile Defense systems by a) providing Information Management/Information Technology (IM/IT) policies, processes and infrastructure through the MDEnterprise 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 an electronic business

**UNCLASSIFIED**

<b>MDAExhibitR -2RDT&amp;EBudgetItemJustification</b>	Date <b>February2003</b>
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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.

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>B. Program Change Summary</b>	FY2002	FY2003	FY2004	FY2005
Previous President's Budget (FY2003 PB)	0	0	0	0
Current President's Budget (FY2004 PB)	0	0	483996	522458
Total Adjustments	0	0	483996	522458
Congressional Specific Program Adjustments	0	0	0	0
Congressional Undistributed Adjustments	0	0	0	0
Reprogrammings	0	0	483996	522458
SBIR/STTR Transfer	0	0	0	0

**UNCLASSIFIED**

<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
--	------------------------------

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COST (\$ in Thousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
0101 System Engineering & Integration	0	0	208048	206320	209436	212972	216911	220588
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

This project was funded under Program Element 0603880C (BMDS System), Project 1050 in FY2002 and FY2003.

The missile defense program focuses on 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 elements 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.

System Engineering and Integration (SE&I) is the core technical effort to define, design, and verify the capability of the BMDS, and to enhance these capabilities over time through blockupgrades. SE&I 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&I 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&I 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&I Risk Management Program (RMP). The RMP identifies and assesses system risks based on the priorities in the TOG and maintains a plan to mitigate those risks. SE&I 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 blockupgrades to the BMDS. Detailed characterizations of the threat are developed and maintained to support BMDS design, development, and verification activities. Engineering analyses are performed to define technologically feasible threats and develop 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. Modeling and simulation of the ACD data are used to produce benchmark scenarios that illustrate the performance of threat systems in order to support analyses of the BMDS.

**B. Accomplishments/Planned Program**

	FY2002	FY2003	FY2004	FY2005
Systems Eng & Integration Core			186800	191400
RDT&E Articles (Quantity)				

System Engineering & Integration is a continuous process of assessing and choosing BMDS technical alternatives that form the basis of BMDS Block approach. This process includes:

UNCLASSIFIED

<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
--	------------------------------

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**SYSTEM EVOLUTION PLANNING PROCESS TASKS ASSESSMENT**

This task involves looking at the system from different perspectives, analyzing its capability and identifying areas of future growth and potential to enhance the system. Once the threat space is established, the candidate elements (both MDA and non-MDA assets) are placed into their respective blocks. Each constituent part of the BMDS is assessed as to how it might contribute to each phase of the layered defense architecture, both singularly and as part of the system as a whole. Program progress and maturity is examined, and potential capability against selected threats is determined.

**ELEMENT/COMPONENT CHARACTERIZATION**

This task looks at the individual pieces of the BMDS and provides detailed programmatic and technical data for evaluation later in the process.

**DEVELOP ALTERNATIVES**

This task looks at the current BMDS definition and capability to identify opportunities and challenges faced to evolve the system and reach the objectives and goals set in the TOG. Quick assessments are performed to identify inflection points for matured enhancements to fill capability gaps and address technical challenges. Candidate system evolution alternatives are defined that present value added enhancements and/or modifications to the BMDS. A rough order of magnitude assessment is done on these alternatives to look at performance, schedule and cost to support prioritization of candidate alternatives and a decision is made as to whether to analyze in further detail. Contributors of this task include: MDA/SED to support the physical description of the current system; MDA/TRR to define the current BMDS CONOPs and identify operations concepts for system enhancements for assessment; MDA/AC and SEB to identify candidate element or component concepts, operations concepts, and technologies potential for infusion into the BMDS development baseline; MDNTS will leverage ongoing system analysis and trade studies to propose candidate system alternatives for detailed assessment.

**ASSESS ALTERNATIVES**

This task uses the technical performance bounds of specifically engineered ballistic missiles identified for analysis in the Threat Description Document (TDD) and configuration controlled threat scenarios in the Scenario Description Document (SDD). The threats and scenarios, which may evolve over time, provide a context for evaluating block capability, as well as candidate changes or additions to blocks. System level trade studies, conducted with approved models and simulations, identify which element and component combinations perform as an effective BMDS.

The integrated assessment task is initiated with a risk assessment that identifies system level risks and determines their severity. It also identifies mitigation activities needed to reduce system risks to acceptable levels. Additional risk assessments of candidate system alternatives is performed as a reality check to incorporate the execution results of elements and components that are critical for the current BMDS development baseline.

Technical and programmatic assessments are performed to identify the system performance of candidate alternatives and identify impact to cost and schedule for the various alternatives being assessed. This task defines the metrics with which system capability will be assessed, identifies the methodology and tools needed to conduct the assessment, and performs the system trade studies to define the BMDS and predict its capability. The BMDS capability by block is determined by system level programmatic, operational, and technical assessments utilizing appropriate metrics and tools already identified. It includes activities needed to gather the relevant information from testers or analysts to construct the assessment. It also includes activities needed to document the results of the assessment.

Threat Systems Engineering (TSE) as part of the MDNTS develops, maintains, and provides configuration control of the detailed engineering of offensive missile descriptions, behaviors, and presentations necessary to support BMD design, development, and testing. TSE conducts engineering analyses to define technologically feasible threat variations, adversary capabilities, missile characteristics, and countermeasure options. TSE identifies key threat parameters, establishes maximum and minimum parameter values, determines and exploits parameter relationships, assesses the impact of non-parametric factors. This activity includes the investigation of failure modes to examine unintended consequences of off-nominal performance of offensive missile systems. These parameters and descriptions are documented in the Adversary Capability Document (ACD) to support BMDS development and evaluation of System robustness to unexpected variations in threat presentation. TSE selects and provides threat characterizations for the Adversary Vignette Database via modeling and simulation in both text and digital form. Finally, TSE employs its "adversary perspective" and experience in technologically feasible countermeasures to conduct analysis and perform risk assessments to support focused BMD effort such as Project Hercules, Targets and Countermeasures, and the Countermeasures/Counter-Countermeasures Program.

**UNCLASSIFIED**

<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
--	------------------------------

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**FY2004 PLANNED PROGRAM:**  
 -Analyze production off-ramps  
 -Assess operational risk of fielding and deployment  
 -Update the Technical Objectives and Goals  
 -Update the System Evolution Plan  
 -Block 2006 Verification Plan  
 -Short and Medium Range RV Concept characterizations  
 -Countermeasure Parametric Space Exploration  
 -Provide AVD threat characterizations  
 -Support BMDS Component threat spacedefinition

**FY2005 PLANNED PROGRAM:**  
 -Update the Technical Objectives and Goals  
 -Update the System Evolution Plan  
 -Block 2008 Verification Plan  
 -AVD and BMDCC Component Support  
 -Completion of CM parametric spacedefinitions  
 -Comprehensive ACD Release

	FY2002	FY2003	FY2004	FY2005
Corporate Lethality Program			21248	14920
RDT&E Articles (Quantity)				

This project provides for MDA planning, management, oversight, and execution of a Ballistic Missile Defense System (BMDS) Corporate Lethality Program (CLP) focused on the following objectives:

- Obtain and share data regarding the implications, including adverse effects, of employing the BMDS system
- Assess the capability of the BMDS to negate threats across all engagement regimes and payload types by calculating weapon mass destruction intercept effects and consequences within a consistent set of uncertainty bounds
- Establish methodology allowing warhead typing based on impact response

The project coordinates and integrates BMD lethality policies and efforts across the BMD elements and technology communities. This project leverages the ongoing BMD element lethality efforts and BMD element/system flight test and evaluation opportunities. The fundamental project efforts include the following:

- Identify, plan, fund and implement experiment to collect lethality data not directly obtainable from element or system test activities
- Establish and implement an MDA BMDS Corporate Lethality policy standard
- Provide a common end-to-end BMDS lethality assessment capability
- Monitor element lethality requirements and performance to ensure consistency and verify compliance with BMDS parameters
- Support MDA decision makers with BMDS lethality technical analyses

**UNCLASSIFIED**

<b>MDA Exhibit R -2 ARDT &amp; E Project Justification</b>	Date <b>February 2003</b>
--	------------------------------

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**FY2004 PLANNED PROGRAM**

In FY2004, this project provides for a continuation of the focus on resolving lethality questions and concerns for bulk chemical targets while transitioning to a greater focus on validating physical phenomena with full -scale flight -test data.

- Provided data and analysis of various chemical agents and their simulants, including fourth -generation agents, to gather critical lethality data. Conduct experiments to investigate in -situ negation, aerodynamic breakup, and aerothermal demise of chemical payloads resulting from BMD terminal phase intercepts.
- Initiate lethality data and analysis on chemical/biological agents at high altitude regimes to support high -endoatmospheric and exoatmospheric BMD elements such as THAAD, AEGIS, and GMD. Conduct simulant and live agent testing at the High Altitude Simulation Facility in Porton Down, UK. Investigate the feasibility of utilizing sounding rockets for the ejection of simulants at high altitudes.
- Initiate major efforts for obtaining actual post -engagement lethality information through "piggy -back" data collection and analysis on BMD elements and system flight test opportunities. Requires prior -year CLP coordination for the inclusion of internally threat representative targets. Instrumentation includes multi -wavelength sensors for tracking and characterization of resulting intercept debris cloud to ground.
- Provide analysis on the potential effect to ballistic missile payloads of rocket engine explosions/high -energy combustion that may result from boost phase intercepts in MUDPACK II experiments.
- Provide assessment on feasibility of methodology for kill assessment/warhead typing based on high -speed spectroscopy of hypervelocity impact flash phenomenology.
- Provide analysis and report on viscoelastic fluid morphology for simulants of persistent nerve agents.
- Provide analysis and report on submunition (both high explosive and chemical payloads) survivability to impact and aerothermal heating damage mechanisms resulting from missile engagement.

**FY2005 PLANNED PROGRAM**

- Provided data and analysis of actual post -engagement lethality information through "piggy -back" efforts on BMD elements and system flight test opportunities. Provided data for improvements or refinements of existing MDACore Lethality Models. Continue coordination for the inclusion of internally threat representative targets on subsequent tests.
- Provide lethality data and analysis on chemical/biological agents at high altitude regimes to support high -endoatmospheric and exoatmospheric BMD elements such as THAAD, SMD, and GMD. Complete simulant and live agent testing at the High Altitude Simulation Facility in Porton Down, UK. Conduct experiments utilizing sounding rockets for the ejection of simulants at high altitudes.
- Provided data and analysis of various chemical agents and their simulants, including fourth -generation agents, to gather critical lethality data. Conduct experiments to investigate in -situ negation, aerodynamic breakup, and aerothermal demise of chemical payloads resulting from BMD terminal phase intercepts.
- Provide lethality data and analysis reporting on intercept effects and consequences for various chemical and biological agents

**C. Other Program Funding Summary**

	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete	Total Cost
PE06 04865C Patriot PAC -3 Theater Missile Defense Acquisition -EMD	130630	176155	0	0	0	0	0	0		
PE0604867C Navy Area Theater Missile Defense -EMD	96121	0	0	0	0	0	0	0		
PE0605502C Small Business Innovative Research -MDA	145102	0	0	0	0	0	0	0		
PE0901585C Pentagon Reservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE0901598C Management Headquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499		

**UNCLASSIFIED**

<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
--	------------------------------

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PE0603880C Ballistic Missile Defense System Segment	790535	1046652	0	0	0	0	0	0		
PE06 03881C Ballistic Missile Defense Terminal Defense Segment	195800	136399	810440	924356	985514	805785	558071	371649		
PE0603882C Ballistic Missile Defense Midcourse Defense Segment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE06038 83C Ballistic Missile Defense Boost Defense Segment	583463	718036	626264	653612	755163	665772	477109	354346		
PE0603884C Ballistic Missile Defense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE0603886C Ballistic Missile Defense System Interceptors	0	0	301052	541178	1127180	1729613	2558327	2904096		
PE0603888C Ballistic Missile Defense Test and Targets	0	0	611522	711181	661416	643302	639839	672396		
PE0603889C Ballistic Missile Defense Products	0	0	343644	384763	333636	343447	349335	360951		
PE0604861C Theater High -Altitude Area Defense System -TMD -EMD	818632	888323	0	0	0	0	0	0		
PE0603879C Advanced Concepts, Evaluations and Systems	0	0	151696	216778	166308	193949	241947	234484		
PE0603869C Meads Concepts -Dem/Val	0	114781	0	0	0	0	0	0		
PE0603175C Ballistic Missile Defense Technology	145021	151130	240820	205791	200956	247990	287864	306472		

**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 (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 for the MDNTS to ensure successful development of the BMDS through system definition & analyses, capability allocation, block integration, and verification. The execution of detailed system engineering and integration is a collaborative effort that is achieved via integrated product teams comprised of individuals from each component of the MDNTS.

**UNCLASSIFIED**

<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissile DefenseSystemCore</b>
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<b>I.ProductDevelopmentCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalProductDevelopment												

**Remarks**

<b>II.SupportCostsCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>SystemEngineering&amp; Integration</b>												
MDNTS(I)	CPAF	Boeing/VA				113600	2Q	115400	1/3Q	CONT.	229000	
SETASupport	CPAF	Sparta/VA				22400	1/2Q	23000	1/2Q	CONT.	45400	
SETASupport	CPAF	CSC/VA				18700	1/2Q	19600	1/2Q	CONT.	38300	
SETASupport	FFP	VRI/VA				700	1/2Q	800	1/2Q	CONT.	1500	
SETASupport	CPFF	SAIC/VA				200	1Q	200	1Q	CONT.	400	
JNIC	Other	Various/CO				4500	1/3Q	4500	1/3Q	CONT.	9000	
NationalLabs	MIPR	Various/Various				1500	1/2Q	1500	1/2Q	CONT.	3000	
<b>CorporateLethalityProgram</b>												
CorporateLethality	MIPR	NSWC/VA				1600	1/2Q	1300	1/2Q	CONT.	2900	
CorporateLethality	MIPR	Battelle/OH				5450	1/3Q	4000	1/2Q	CONT.	9450	
CorporateLethality	CPAF	UKMOD/UK				550	1/2Q	200	1Q	CONT.	750	
CorporateLethality	CPAF	SMDC/AL				9366	1/3Q	6395	1/3Q	CONT.	15761	
CorporateL ethality	Various	Various				832	1/2Q	875	1/2Q	CONT.	1707	
SubtotalSupportCosts			0	0		179398		177770			357168	

**Remarks**

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>										Date <b>February2003</b>		
<b>APPROPRIATION/BUDGETACTIVITY</b>					<b>R-INOMENCLATURE</b>							
<b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>					<b>0603890CBallisticMissile DefenseSystemCore</b>							
<b>III.TestandEvaluationCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalTestandEvaluation												
<b>Remarks</b>												
<b>IV.ManagementServicesCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>SystemEngineering&amp; Integration</b>												
FFRDC/UARC/DOELab	MIPR	Aerospace/CA				3818	1/2Q	3890	1/2Q	CONT.	7708	
FFRDC/UARC/DOELab	MIPR	MIT/LL/MA				2024	1/2Q	2082	1/2Q	CONT.	4106	
FFRDC/UARC/DOELab	MIPR	MITRE/VA				2121	1/2Q	2161	1/2Q	CONT.	4282	
FFRDC/UARC/DOELab	CPFF	APL/MD				3032	1/2Q	3109	1/2Q	CONT.	6141	
FFRDC/UARC/DOELab	MIPR	Various				10005	1/2Q	10458	1/2Q	CONT.	20463	
GovernmentPersonnelSpt	Other	WHS/Washington, D.C.				3600		4100		CONT.	7700	
Travel	Other	Various				600		600		CONT.	1200	
<b>CorporateLethalityProgram</b>												
CorporateLethality	FFRDC	NM/CA/MA				3450	1/2Q	2150	1/2Q	CONT.	5600	
SubtotalManagementServices			0	0		28650		28550			57200	
<b>Remarks</b>												
ProjectTotalCost			0	0		208048		206320			414368	
<b>Remarks</b>												



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MDAExhibitR -4AScheduleDetail						Date February2003		
APPROPRIATION/BUDGETACTIVITY 4.AdvancedComponentDevelopmentandPrototypes(ACD&P)				R-1NOMENC LATURE 0603890CBallisticMissileDefenseSystemCore				
ScheduleProfile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
<b>Deliveries</b>								
BlockECS/CCS			3Q	2Q	1Q,4Q	3Q	2Q	1Q,4Q
BlockSCS			3Q	2Q	1Q,4Q	3Q	2Q	1Q,4Q
BlockVerificationPlan/Updates			4Q	1Q				
BlockV erificationPlan/Updates			3Q	4Q				
Exemplar/UpdateThreatSystemCharacterizations				3Q				
Exemplar/UpdateThreatSystemCharacterizations			3Q					
GovernmentVerificationManagementPlan			1Q	1Q				
InterfaceControlSpecifications			3Q	2Q	1Q,4Q	3Q	2Q	1Q,4Q
SystemEvolutionPlan/Updates			3Q	3Q	3Q	3Q	3Q	3Q
TOG/Updates			3Q	3Q	3Q	3Q	3Q,4Q	
UpdateACD			1Q	3Q				
<b>Studies&amp;Analyses</b>								
Analyzeproductionoff -ramps			2Q	2Q	2Q	2Q	2Q	2Q
CompletealternativesforBMDSBlock architecture			2Q					
CompleteconceptualdesignBlk2010&BMDS Element			2Q					
ReviewfuturedesignforBlock&BMDSElements			2Q					
ReviewmultiplecandidatesforBlockarchitecture			2Q					
<b>Decisions</b>								
SEPPresentedatSystem DesignReview			2Q,4Q	2Q,4Q	2Q,4Q	2Q,4Q	2Q,4Q	2Q,4Q
<b>Milestones</b>								
Assessoperationalrisks			2Q	2Q	2Q	2Q	2Q	2Q

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<b>MDA ExhibitR -2ARDT&amp;EProjectJustification</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-1NOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>
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COST(\$inThousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
0201CommandandControl,BattleManagement andCommunicationsCore	0	0	15556	16193	68447	83559	87060	89357
RDT&EArticlesQty	0	0	0	0	0	0	0	0

**A.MissionDescriptionandBudgetItemJustification**

ThisProjectwasfundedunderPE0603880C(BMDSsystem),Projects1010and1020,forFY2002andFY 2003.

TheBMDSCommand,Control,BattleManagementandCommunications(C2BMC)elementistheintegratingfunctionacrossallBMDSelements.ItisalsotheelementthatintegratestheBMDSinto theC2structureoftheCombatantCommandersandintothatof alliesandfriends.C2BMCwill evolvefromtoday'slimitedautonomousdefenseBMDScapabilityintoaglobalintegratedBMDS capability.TheBMDS C2BMCfunctionalitywill matureinto CollaborativeDistributedPlanningandincreasedSituationalAwarenessC2 capabilities thatsupportEngagementCoordinationand IntegratedFireControlBMcapabilities.

MDAestablishedaMissileDefenseNationalTeamBM/C2/Comm(MDNTB)constructodeliveranintegratedBMDS C2BMsystem.This effortrequiresacollaborative enterprisecomprisedofthe bestandmostexperiencedmindsofIndustryandGovernment.BeginninginFY2004thisprojectwill providefundinginsupportofFederallyFundedResearchandDevelopmentCenter(FFRDC), andUniversityAffiliatedResearchCenter (UARC)providers.TheconceptofoperationsfortheMDNTBwillcontinuetobeasfollows:theGovernmentcontinuestoprovidetheoverall managementoftheBMDSprogramandparticipateswiththeMDNTB;andtheMDNTBisresponsiblefortheengineering ,design,developmentanddeliveryofanexecutableBMDS C2/BM/CommArchitecture,BMDS C2/BM/CommBlockcapabilitiespecifications,andtheintegrationofBMDSElementsintotheBMDS C2/BM/CommArchitecture

**B.Accomplishments/PlannedProgram**

	FY2002	FY2 003	FY2004	FY2005
NationalTeam(BC)			13416	13954
RDT&EArticles(Quantity)				

TheMDNTBcorereflectsinstructurecosts,cross -Blockandcross -IPTactivities.Infrastructurecostsinclude:facilitieslease,equipmentandrecurringpurchases expenses;property administration;securitymanagementandlabor;material;I/Tsupport,contractI/T,HWandSWmaintenance;telecommunicationsexpensesincludingcontracttelecommunications,HWcircuits,SW andSWMaintenance.Cross -BlockandCross -IPTactivitiesarecapturedintheProgramControlIPTthatmanages thebusinessfunctionsoftheMDNTB(I).Theseactivitiesinclude:finance, programmanagement,ODC,travel,subcontractmanagement,developmentoftheIntegratedManagementPlanandIntegrated MasterSchedule,ConfigurationManagement,informationsecurity,and others.

	FY2002	FY2003	FY2004	FY2005
FFRDC			245	245
RDT&EArticles(Quantity)				

BeginninginFY2004thisPEwill providefundinginsupportofFederallyFundedResearchand DevelopmentCenter(FFRDC),andUniversityAffiliatedResearchCenter(UARC)providers.The FFRDCpersonnelareintegratedintotheMDNTB.TheGovernmentcontinuestoprovidetheoverallmanagementoftheBMDSprogramandparticipateswiththeMDNTB; andtheMDNTBis

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<b>MDA ExhibitR -2ARDT&amp;EProjectJustification</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-1NOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>
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responsiblefortheengineering,design,developmentandprototypedeliveryofanexecutableBMDSC2BMCArchitecture,BMDSC2BMCBlockcapabilitiespecifications,andtheintegrationof BMDSElementsintotheBMDSC2BMCArchitecture.TheCoreFFRDCsupportidentifiedaboverepresentsoneStaffTechnicalEquivalent(STE)levelofsupport.

	FY2002	FY2003	FY2004	FY2005
ContractorSupport			295	294
RDT&EArticles(Quantity)				

SupportcontractsthatstaysupportthisprojectperContractUtilizationBoarddeterminationofFY2001.SETApersonnelareintegratedintotheMDNTB.ThisactivityissupportedbytwoprimeSETA contracts:SpartaInc.,andCSC,Inc.TheCoreSETAsupportidentifiedaboverepresentsmanagementsupportonly.

	FY2002	FY2003	FY2004	FY2005
Gov.ProjectPersonnel&Support			1600	1700
RDT&EArticles(Quantity)				

SupporttheMDAC2BMCDirectorateadministrationeffort.Fundingforgovernmentalararies.

**C.OtherProgramFundingSummary**

	FY2002	FY2003	FY20 04	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete	Total Cost
PE0603880CBallisticMissileDefense SystemSegment	790535	1046652	0	0	0	0	0	0		
PE0603881CBallisticMissileDefense TerminalDefenseSegment	195800	136399	810440	924356	985514	805785	558071	371649		
PE0603882CBallisticMissileDefense MidcourseDefenseSegment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE0603883CBallisticMissileDefenseBoost DefenseSegment	583463	718036	626264	653612	755163	665772	477109	354346		
PE0603884CBallisticMissileDefense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE0603886CBallisticMissileDefense SystemInterceptors	0	0	301052	541178	1127180	1729613	2558327	2904096		
PE0603888CBallisticMissileDefenseTest andTargets	0	0	611522	711181	661416	643302	639839	672396		

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<b>MDA ExhibitR -2ARDT&amp;EProjectJustification</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>
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PE0603889CBallisticMissileDefense Products	0	0	343644	384763	333636	343447	349335	360951		
PE0604861CTheaterHigh -AltitudeArea DefenseSystem -TMD -EMD	818632	888323	0	0	0	0	0	0		
PE0603879CAAdvancedConcepts, EvaluationsandSystems	0	0	151696	216778	166308	193949	241947	234484		
PE0603869CMeadsConcepts -Dem/Val	0	114781	0	0	0	0	0	0		
PE0603175CBallisticMissileDefense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE0604867CNavyAreaTheaterMissile Defense -EMD	96121	0	0	0	0	0	0	0		
PE0605502CSmallBusinessInnovative Research -MDA	145102	0	0	0	0	0	0	0		
PE0901585CPentagonReservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE0901598CManagementHeadquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499		
PE0604865CPatriotPAC -3TheaterMissile DefenseAcquisition -EMD	130630	176155	0	0	0	0	0	0		

**D.AcquisitionStrategy**

Command,Control,BattleMan agementandCommunications(C2BMC)willcontinuetofollowtheMDA'scapability -basedacquisitionstrategythatemphasizesassessment,spiral -development testingandevolutionaryacquisitionthroughthedefinitionoftwo -yearcapabilityblocks.

The design anddevelopmentofaBMDSCommandandControl,BattleManagementandCommunicationArchitectureandSystemSpecificationsisacollaborativeeffort.Thestrategyistorequire theMissileDefenseNationalTeamBM/C2/C(MDNTB(I))toperformtheengineering anddeliveryofanexecutableC2BMCTestBed,C2BMCBlockcapabilityspecifications,designspecifications andinterfacecontroldocumentsfortheBMDS.TheMDNTwillbecomposedoftwoindustryteams(MDNTB(I)&MDNTS(I)),majordefensecontractors,engi neersfromFederallyFunded ResearchandDevelopmentCenters(FFRDC),UniversityAffiliatedResearchCenters(UARC)andSystemEngineeringandTechnicalAssistance(SETA)defensecontractors,andthegovernment.

TheintentistodevelopafullycapableB MDSTestBedwhileretainingdevelopmentcapabilitythatcanbeusedforemergencydeployment.C2BMCcapabilitycanbetransitionedintofurther operationalforcestructureviacoordinationwiththeServicesandtheiracquisitioncommunitysotheycanpla n,budgetandprocurenecessaryHW/SWforoperationaldeployedandsustainedforces.

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MDA Exhibit R - 3 RDT & E Project Cost Analysis									Date February 2003			
APPROPRIATION/BUDGET ACTIVITY 4. Advanced Component Development and Prototypes (ACD & P)					R-1 NOMENCLATURE 0603890C Ballistic Missile Defense System Core							
<b>I. Product Development Cost (\$ in Thousands)</b>												
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Product Development												
<b>Remarks</b>												
<b>II. Support Costs Cost (\$ in Thousands)</b>												
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>National Team (BC)</b>												
MDNTB(I)	C/CPAF	MDNTB(I)/Gaithersburg, MD				13416	1/2Q	13954	1/2Q	CONT.	27370	CONT.
<b>FFRDC</b>												
FFRDC	C/Variou	Variou/Variou				245	1Q	245	1Q	CONT.	490	CONT.
<b>Contractor Support</b>												
SETA	Variou	Sparta, CSC/Arl, VA				295	1Q	294	1Q	CONT.	589	CONT.
<b>Gov. Project Personnel &amp; Support</b>												
Gov't Personnel	Other	MDA/Arl, VA				1600		1700		TBD	3300	
Subtotal Support Costs			0	0		15556		16193			31749	
<b>Remarks</b>												
<b>III. Test and Evaluation Cost (\$ in Thousands)</b>												
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Test and Evaluation												
<b>Remarks</b>												

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.Advan cedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-1NOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>
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<b>IV.ManagementSer vicesCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Value of Contract
SubtotalManagementServices												

**Remarks**

ProjectTotalCost			0	0		15556		16193			31749	
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**Remarks**

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<b>MDAExhibitR -4ScheduleProfile</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCor e</b>
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FiscalYear	2002				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	1	2	3	4				
<b>ContractualActivities&amp;Events</b>																																				
MDNTB(I)Part2ContractIntegrated BaselineRvw					Δ																															
MDNTB(I)Part3ContractAward									Δ																											
MDNTB(I)Part3ContractIntegrated BaselineRvw													Δ																							
MDNTB(I)Part3ContractNegotiations																																				
MDNTB(I)Part4ContractAward																																				
MDNTB(I)Part4ContractIntegrated BaselineRvw																																				
MDNTB(I)Part4ContractNegotiations																																				
MDNTB(I)Part5ContractAward																																				
MDNTB(I)Part5ContractIntegrated BaselineRvw																																				
MDNTB(I)Part5ContractNegotiations																																				

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<b>MDAExhibitR -4AScheduleDetail</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>
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ScheduleProfile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
<b>ContractualActivities&amp;Events</b>								
MDNTB(I)Part2ContractIntegratedBaselineRvw		2Q						
MDNTB(I)Part3ContractAward			1Q					
MDNTB(I)Part3ContractIntegratedBaselineRvw			3Q					
MDNTB(I)Part3ContractNegotiations		3Q-4Q	1Q					
MDNTB(I)Part4ContractAward					1Q			
MDNTB(I)Part4ContractIntegratedBaselineRvw					3Q			
MDNTB(I)Part4ContractNegotiations				3Q-4Q	1Q			
MDNTB(I)Part5ContractAward							1Q	
MDNTB(I)Part5ContractIntegratedBaselineRvw							3Q	
MDNTB(I)Part5ContractNegotiations						3Q-4Q	1Q	

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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COST (\$ in Thousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
0102 Intelligence	0	0	19362	21281	22051	23465	26875	28378
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

This Project was funded under PE0603880C (BMDS system), Project 1050, in FY2002 and FY2003.

This Project is the primary source for managing, analyzing, assessing, and sharing intelligence data and information related to missile threats. This information and its associated products play a key role in missile defense threat analysis and development of a ballistic missile defense system (BMDS) that is responsive to those threats. Critical products include Intelligence Community - validated threat descriptions and associated capstone threat and countermeasures information, e.g., the Missile Defense Threat Assessment (MDTA).

Under this Project, the MDA Intelligence Directorate (MDA/IN) serves as both the 1) principal advisor to the MDA Director and staff on all intelligence matters related to missile defense, and 2) MDA liaison to the Intelligence Community. MDA/IN provides current and projected intelligence information to support all MDA activities (across the boost, midcourse, and terminal phases for capabilities-based acquisition) and defines and documents potential adversary military systems and forces, principally theater and strategic missiles, which the Ballistic Missile Defense System (BMDS) could be expected to confront. Functional areas include: current intelligence, intel assessments, scenarios, wargaming, asymmetric threat, and foreign material acquisition/exploitation.

**B. Accomplishments/Planned Program**

	FY2002	FY2003	FY2004	FY2005
Intelligence Program			5210	6132
RDT&E Articles (Quantity)				

In FY2002 and FY2003, this effort was funded under Program Element 0603880C (Ballistic Missile Defense System).

Under this effort, work closely with the Intelligence Community and the various Ballistic Missile Defense System (BMDS) Component Managers in order to ensure missile defense intelligence production requirements (PR) are accurately defined and designed to support development and deployment of a BMDS capable of countering a missile threat.

**FY2004 PLANNED PROGRAM:**

- Conduct intelligence studies aimed at assessing traditional threat capabilities.
- Coordinate/identify threat system design intelligence production requirements used for analysis of missile defense.

**FY2005 PLANNED PROGRAM:**

- Conduct intelligence studies aimed at assessing traditional threat capabilities.
- Coordinate/identify threat system design intelligence production requirements used for analysis of missile defense.

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MDAExhibitR -2ARDT&EProjectJustification			Date February2003	
APPROPRIATION/BUDGETACTIVITY 4.AdvancedComponentDevelopmentandPrototypes(ACD&P)		R-INOMENCLATUR E 0603890CBallisticMissileDefenseSystemCore		
	FY2002	FY2003	FY2004	FY2005
IntelligenceApplicationsPr ogram			3477	1451
RDT&EArticles(Quantity)				
<p>InFY2002andFY2003,thiseffortwasfundedunderProgramElement0603880C(BallisticMissileDefenseSystem).</p> <p>Underthiseffort,conductthreatmodelingandthreatcapabilitiesstudiesandanalyses. Basedondetailedcharacterizationsofthreatmissilesystems,create,maintain,employ,andupdateallmissile defensethreatmodelsusedforanalysisoftheBMDS.Conductstudiesandanalysesbasedon"surrogateintelligence,"i.e.,intelligenceoutside therangeoftraditionalintelligenceestimates.</p> <p>FY2004PLANNEDPROGRAM: -Producefour(4)StrategicandTheaterConflictScenarios(STCS). -UpdatetheThreatModeling&amp;SimulationSystem(TMSS).</p> <p>FY2005PLANNEDPROGRAM: -Producefour(4)Strategi candTheaterConflictScenarios(STCS). -Conductverification,validation,andaccreditation(VV&amp;A)oftheThreatModeling&amp;SimulationSystem(TMSS).</p>				
	FY2002	FY2003	FY2004	FY2005
SpecialProgramsCenter(SPC)			2557	3542
RDT&EArticles(Quantity )				
<p>InFY2002andFY2003,thiseffortwasfundedunderProgramElement0603880C(BallisticMissileDefenseSystem).</p> <p>DevelopandproducethreatscenariosdesignedforuseinanalyzingtheengineeringandarchitectureoftheBMDS.Thesescenariosare criticaltothedevelopmentofconceptofoperations (CONOPS)fortheBMDS.Alsoperformmodelingandsimulationofallthreatmissilesandrelatedobjectsforuseinsceniodevelopment.</p> <p>FY2004PLANNEDPROGRAM: -Produceandcombinealldatanecessar ytosupporttheStrategicandTheaterConflictScenarios(STCS)productioneffortundertheIntelligenceApplicationsProgramTask.</p> <p>FY2005PLANNEDPROGRAM: -ProduceandcombinealldatanecessarytosupporttheStrategicandTheaterConflictScenarios (STCS)productioneffortundertheIntelligenceApplicationsProgramTask.</p>				

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>			Date <b>February 2003</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>R-INOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>		
	FY2002	FY2003	FY2004	FY2005
Wargaming			400	400
RDT&E Articles (Quantity)				
<p>In FY2002 and FY2003, this effort was funded under Program Element 0603880C (Ballistic Missile Defense System).</p> <p>Represent the opposing force in all MDA sponsored wargames and exercises. Portray realistic and dynamic opponent to enable effective analyses of tactics used for the BMDS in order to assist in the development of concept operations (CONOPS) for the BMDS.</p> <p><b>FY2004 PLANNED PROGRAM:</b> - Provide threats support in all MDA sponsored and supported wargames and exercises.</p> <p><b>FY2005 PLANNED PROGRAM:</b> - Provide threats support in all MDA sponsored and supported wargames and exercises.</p>				
	FY2002	FY2003	FY2004	FY2005
Intelligence Collections			1711	3693
RDT&E Articles (Quantity)				
<p>In FY2002 and FY2003, this effort was funded under Program Element 0603880C (Ballistic Missile Defense System).</p> <p>Measurement and Signature Intelligence (MASINT) applications for missile defense testing and contingency support is a high priority requirement in support of the agency mission. MASINT functions include electro-optical, radar and radio frequency tasking, collection, analysis and testing. Exploiting these areas provides some of the best possibilities for worldwide missile launch detection, characterization and typing. Also, these capabilities and associated sensor and processing assets provides an important infrastructure for building near term (Block 04 and 06) missile defense systems. Incorporating current MASINT asset capabilities, tailoring those capabilities to the BMD mission and connectivity to designated BMDS Command and Control (C2) nodes is critical.</p> <p><b>FY2004 PLANNED PROGRAM:</b> - Restructure current MASINT reporting to provide real-time (R/T) data streams to BMD node(s). - Leverage community algorithm development effort for ballistic missile events and focus on reporting to enhance missile defense. - Establish worldwide missile analysis and reporting cell (MARC) to provide enhanced and more timely reporting of missile launch events, system type, metric and signature data summaries in a reduced timeline and directed by MDA requirements.</p> <p><b>FY2005 PLANNED PROGRAM:</b> - Expand MASINT reporting data streams to BMD nodes through increasing number of assets used in warning of potential launch events and coordinate processing of these data streams with other assets to bring higher confidence of detection and characterization and reduce false alarms. - Expand worldwide missile analysis and reporting cell (MARC) to provide for near real-time (NRT) analysis of signature and metric performance data sets to evaluate reporting on threat development, discrimination signature profile matching and system identification confidence building and database assurance.</p>				

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MDA Exhibit R -2 ARDT&E Project Justification			Date February 2003	
APPROPRIATION/BUDGET ACTIVITY 4. Advanced Component Development and Prototypes (ACD&P)		R-INOMENCLATURE 0603890C Ballistic Missile Defense System Core		
	FY2002	FY2003	FY2004	FY2005
Intelligence Analysis			1818	1720
RDT&E Articles (Quantity)				
<p>In FY2002 and FY2003, this effort was funded under Program Element 0603880C (Ballistic Missile Defense System).</p> <p>Apprise the MDA Director and Staff of intelligence -related information. Analyze foreign ballistic missile developments affecting BMDS development. Provide weekly Director's Intelligence Update. Prepare special intelligence briefings for the Deputy Director and Technical Director and present monthly intelligence briefings to the MDA Staff. Review MDA Staff actions for accuracy of intelligence-related content. Represent MDA at the Director of Central Intelligence's (DCI) MASINT Committee and Mission Requirements Board.</p> <p><b>FY2004 PLANNED PROGRAM:</b>                      -Analyze current intelligence data and information.                      -Apprise the MDA and Staff of relevant missile-related intelligence.</p> <p><b>FY2005 PLANNED PROGRAM:</b>                      -Analyze current intelligence data and information.                      -Apprise the MDA and Staff of relevant missile-related intelligence.</p>				
	FY2002	FY2003	FY2004	FY2005
Emerging Adversaries			595	640
RDT&E Articles (Quantity)				
<p>In FY2002 and FY2003, this effort was funded under Program Element 0603880C (Ballistic Missile Defense System).</p> <p>Draw on available intelligence (e.g., Intelligence Community reports, defense contractor studies, in-house analyses) to determine how new adversaries could employ missiles as weapons against the U.S. Homeland and U.S. and Allied Forces abroad. In particular, track terrorist activities, including potential use of missiles launched from non-traditional platforms, e.g., merchant vessels and barges. Construct and manage wargames to gain realistic knowledge of unconventional or asymmetric attacks and to better understand defensive requirements. Host an annual conference on emerging adversary capabilities.</p> <p><b>FY2004 PLANNED PROGRAM:</b>                      -Conduct various studies based on potential terrorist (or asymmetric) use of missiles against the U.S. and its interests.                      -Conduct wargame based on asymmetric threat.                      -Conduct scenario development based on emerging adversaries.                      -Conduct conference on emerging adversaries with missile capabilities.</p> <p><b>FY2005 PLANNED PROGRAM:</b>                      -Conduct various studies based on potential terrorist (or asymmetric) use of missiles against the U.S. and its interests.                      -Conduct wargame based on asymmetric threat.</p>				

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<b>MDAExhibitR -2ARDT&amp;EProjectJustification</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-INOMENCLATUR E</b> <b>0603890CBallisticMissileDefenseSystemCore</b>
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-Conductscenario developmentbasedonemergingadversaries.  
 -Conductconferenceonemergingadversarieswithmissilecapabiliti es.

	FY2002	FY2003	FY2004	FY2005
ProjectManagement			3594	3703
RDT&EArticles(Quantity)				

**C.OtherProgramFundingSummary**

	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete	Total Cost
PE0603889CBallisticMissileDefense Products	0	0	343644	384763	333636	343447	349335	360951		
PE0604861CTheaterHigh -AltitudeArea DefenseSystem -TMD -EMD	818632	888323	0	0	0	0	0	0		
PE0604865CPatriotPAC -3TheaterMissile DefenseAcquisition -EMD	130630	176155	0	0	0	0	0	0		
PE0604867CNavyAreaTheaterMissile Defense -EMD	96121	0	0	0	0	0	0	0		
PE0605502CSmallBusinessInnovative Research -MDA	145102	0	0	0	0	0	0	0		
PE0901585CPentagonReservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE0901598CManagementHeadquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499		
PE0603175CBallisticMissileDefense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE0603869CMeadsConcepts -Dem/Val	0	114781	0	0	0	0	0	0		
PE0603879CAAdvancedConcepts, EvaluationsandSystems	0	0	151696	216778	166308	193949	241947	234484		
PE0603880CBallisticMissileDefense SystemSegment	790535	1046652	0	0	0	0	0	0		
PE0603881CBallisticMissileDefense TerminalDefenseSegment	195800	136399	810440	924356	985514	805785	558071	371649		

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<b>MDAExhibitR -2ARDT&amp;EProjectJustification</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-INOMENCLATUR E</b> <b>0603890CBallisticMissileDefenseSystemCore</b>
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PE0603882CBallisticMissileDefense MidcourseDefenseSegment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE0603883CBallisticMissileDefenseBoost DefenseSegment	583463	718036	626264	653612	755163	665772	477109	354346		
PE0603884CBallisticMissileDefense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE0603886CBallisticMissileDefense SystemInterceptors	0	0	301052	541178	1127180	1729613	2558327	2904096		
PE0603888CBallisticMissileDefenseTest andTargets	0	0	611522	711181	661416	643302	639839	672396		

**D.AcquisitionStrategy**

NotApplicable.TheIntelligenceeffortsareintendedtosupportallBMDScomponents(andfunctionalareas)asneededin  
conceptofoperations. ordertoinfluenceandenhanceoverallBMDSdesign,architecture,and

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MDA Exhibit R - 3 RDT & E Project Cost Analysis									Date February 2003			
APPROPRIATION/BUDGET ACTIVITY 4. Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603890C Ballistic Missile Defense System Core							
<b>I. Product Development Cost (\$ in Thousands)</b>												
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Product Development												
<b>Remarks</b>												
<b>II. Support Costs Cost (\$ in Thousands)</b>												
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>Intelligence Program</b>												
SMDC	Various	SMDC/Huntsville, AL	0	0		417	1/2Q	491	1/2Q		908	
USAF	Various	Various	0	0		1719	1/2Q	2024	1/2Q		3743	
MDA	Various	Various	0	0		3074	2Q	3617	2Q		6691	
<b>Intelligence Applications Program</b>												
SMDC	Various	Huntsville/AL	0	0		3268	1/2Q	1364	1/2Q		4632	
MDA	Various	Various	0	0		209	1/2Q	87	1/2Q		296	
<b>Special Programs Center (SPC)</b>												
JNIC	Various	SPC/Colorado Springs, CO	0	0		2557	1/2Q	3542	1/2Q		6099	
<b>Wargaming</b>												
JNIC	Various	SPC/Colorado Springs, CO	0	0		400	1/2Q	400	1/2Q		800	
<b>Intelligence Collections</b>												
MDA	Various	Various	0	0		1711	1/3Q	3693	1/3Q		5404	
<b>Intelligence Analysis</b>												
MDA	Various	Various	0	0		1818	1/3Q	1720	1/3Q		3538	
<b>Emerging Adversaries</b>												
MDA	Various	Various	0	0		595	1/2Q	640	1/2Q		1235	

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>										Date <b>February2003</b>		
<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>					<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>							
SubtotalSupportCosts			0	0		15768		17578			33346	
<b>Remarks</b>												
<b>III.TestandEvaluationCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalTestandEvaluation												
<b>Remarks</b>												
<b>IV.ManagementServicesCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>ProjectManagement</b>												
GovtPersonnel	Other	Various	0	0		194	2Q	203	2Q		397	
SupportContracts	Various	Various	0	0		3400	2Q	3500	2Q		6900	
SubtotalManagementServices			0	0		3594		3703			7297	
<b>Remarks</b>												
ProjectTotalCost			0	0		19362		21281			40643	
<b>Remarks</b>												



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<b>MDAExhibitR -4AScheduleDetail</b>						Date <b>February2003</b>		
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>				<b>R-1NOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>				
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ScheduleProfile	FY200 2	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
<b>Studies&amp;Analyses</b>								
ScenarioDev(e.g.,Campaigns&Vignettes)			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
WargamingSupport			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
<b>Other</b>								
CurrentI ntelligenceUpdates/Reports			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
IA -IntelligenceAssessments			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
IA:AerodynamicMDTA(AMDTA)			4Q	4Q	4Q	4Q	4Q	4Q
IA:MissileDefenseThreatAssessment(MDTA)			3Q	3Q	3Q	3Q	3Q	3Q
UpdateandMaintainForeignMissileKnowledge Base			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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COST (\$ in Thousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
0203 Joint Warfighter Support	0	0	245	1245	3163	3205	3291	3376
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

This project was funded under PE0603880C (BMDS system), Project 1050, for FY2002 and FY2003.

Beginning in FY2004, funding for a portion of this effort will transition from BMDS Systems Program Element (PE)(0603880C -Project 1055) to the new Ballistic Missile Defense Products PE(0603887C -Project 0703).

The Joint Warfighter Support program is the integrating function across the Combatant Commanders, the Joint Staff, the Services, Allies and Friends. It is also the function that integrates the Integrated Missile Defense (IMD) Concept of Operations (CONOPS) into the BMDS development. It 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 program also supports planning for emergency deployments, integration of STRATCOM/NORTHCOM in required wargames, tabletops, experiments, System Integrated Tests, and Hardware in the Loop Tests required for enhanced use of JNIC in support of operational concept development.

This program also provides funds to support the Service Liaison to MDA and the MDA role in the Joint Theater Air and Missile Defense (JTAMD) process in the development of the JTAMD Summary and assessment of associated system architectures.

**B. Accomplishments/Planned Program**

	FY2002	FY2003	FY 2004	FY2005
Joint Warfighter Support			245	1245
RDT&E Articles (Quantity)				

Funding for the Joint Warfighter Project transitions from Project 1055 to Project 0203 beginning in FY2004.

Facilitate Program transition to Services.

Maintain interaction with transitioned programs.

Develop BMDS Support Structure.

Train/Assist training the Force.

Conduct studies to support future capability employment concept.

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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<b>C. Other Program Funding Summary</b>										
	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete	Total Cost
PE0603175C Ballistic Missile Defense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE0603869C Meads Concepts -Dem/Val	0	114781	0	0	0	0	0	0		
PE0603879C Advanced Concepts, Evaluations and Systems	0	0	151696	216778	166308	193949	241947	234484		
PE0603880C Ballistic Missile Defense System Segment	790535	1046652	0	0	0	0	0	0		
PE0603881C Ballistic Missile Defense Terminal Defense Segment	195800	136399	810440	924356	985514	805785	558071	371649		
PE0603882C Ballistic Missile Defense Midcourse Defense Segment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE0603883C Ballistic Missile Defense Boost Defense Segment	583463	718036	626264	653612	755163	665772	477109	354346		
PE0603884C Ballistic Missile Defense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE0603886C Ballistic Missile Defense System Interceptors	0	0	301052	541178	1127180	1729613	2558327	2904096		
PE0603888C Ballistic Missile Defense Test and Targets	0	0	611522	711181	661416	643302	639839	672396		
PE0603889C Ballistic Missile Defense Products	0	0	343644	384763	333636	343447	349335	360951		
PE0604861C Theater High -Altitude Area Defense System -TMD -EMD	818632	888323	0	0	0	0	0	0		
PE0604867C Navy Area Theater Missile Defense -EMD	96121	0	0	0	0	0	0	0		
PE0605502C Small Business Innovative Research -MDA	145102	0	0	0	0	0	0	0		
PE0901585C Pentagon Reservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE0901598C Management Headquarters -MDA	30191	25365	93441	101373	114107	121743	128972	133499		
PE0604865C Patriot PAC -3 Theater Missile Defense Acquisition -EMD	130630	176155	0	0	0	0	0	0		

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603890C Ballistic Missile Defense System Core</b>
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D. Acquisition Strategy

Joint Warfighter Support will continue to follow the MDA's capability-based acquisition strategy that emphasizes assessment, spiral development testing and evolutionary acquisition through the definition of two-year capability blocks. TR will accomplish this through development and vetting of Operational Concepts through JTAMDO, the Combatant Commanders and the Services utilizing seminars, workshops, tabletops, wargames and exercises, which also support Military Utility Assessment.

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>										Date <b>February2003</b>		
<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>					<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>							
<b>I.ProductDevelopmentCost(\$inThousands)</b>												
CostCategories:	Contract Method &T type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalProductDevelopment												
<b>Remarks</b>												
<b>II.SupportCostsCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalSupportCosts												
<b>Remarks</b>												
<b>III.TestandEvaluationCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalTestandEvaluation												
<b>Remarks</b>												

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>
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<b>IV.ManagementServicesCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>JointWarfighterSupport</b>												
JointWarfighterSuppo rt	Various	Sparta,CSC, Vanguard/Arl,VA				245	2Q	1245	2Q	TBD	1490	TBD
SubtotalManagementServices			0	0		245		1245			1490	

**Remarks**

ProjectTotalCost			0	0		245		1245			1490	
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**Remarks**

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<b>MDAExhibitR -4 ScheduleProfile</b>	Date <b>February2003</b>
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APPROPRIATION/BUDGETACTIVITY <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	R-1NOMENCLATURE <b>0603890CBallisticMissileDefenseSystemCore</b>
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FiscalYear	2002				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	1	2	3	4				
<b>Block2006</b>																																				
JointWarfighter																																				

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<b>MDAExhibitR -4AScheduleDetail</b>						Date <b>February2003</b>		
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>				<b>R-1NOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>				
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ScheduleProfile	FY2002	FY200 3	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
<b>Block2006</b>								
JointWarfighter				1Q-4Q	1Q-4Q	1Q-4Q		

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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COST (\$ in Thousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
0103 Producibility & Manufacturing Technology	0	0	30769	39967	38890	37947	41269	30059
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

This project was funded under Program Element 0603880C (BMDS System), Project 1070, in FY2002 and FY2003.

Producibility and Manufacturing Technology (MP) project program provides manufacturing technologies and implementation strategies that benefit the Ballistic Missile Defense System (BMDS). These include near term insertion effort that demonstrate capabilities for multiple applications across the BMDS encompassing risk reduction, cost reduction/avoidance and performance enhancement. These efforts are identified by utilizing systems engineering analyses 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**

	FY2002	FY2003	FY2004	FY2005
Producibility & MANTECH			21769	21967
RDT&E Articles (Quantity)				

Project was funded under Program Element 0603880C (BMDS System) in FY2002 and FY2003.

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 producibility and mantech projects included 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); design component test risk reduction for midcourse Divert and Attitude Control System (DACS) which includes propulsion, laser and radars; and the initial tests for the Angle -Angle Range Intensity (AARI) Laser Radar (LADAR).

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

<b>MDA Exhibit R -2 ARDT &amp; E Project Justification</b>		Date <b>February 2003</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>	
<p>components. Manufacturing Technology focuses on the reduction of risks, costs, and cycle times associated with the development of BMD elements. MDA/MP leverages DoD, Services, Government Agencies, and Industry programs to assess these processes and determine the viability and impact to the BMDs.</p> <p>FY2004 PLANNED PROGRAM:</p> <ul style="list-style-type: none"> <li>-AARILADAR - Perform operational testing at White Sands Missile Range using a representative target missile.</li> <li>-Provide operational data to verify target acquisition, tracking, IR and -off and target discrimination in a representative combined IR/LADAR system.</li> <li>-AOP - Complete the development of the 1 GHz AOP.</li> <li>-AOP - Test in representative Radar Systems at MIT/LL and at KMR to image, discriminate, and track simulated and real targets.</li> <li>-AOP - Verify the capability of the 1 GHz AOP that will provide high fidelity range compressed and range -doppler imaging.</li> <li>-VLWIRFPA - Complete the scale up of a producible 192X192 FPAs for characterization testing.</li> <li>-VLWIRFPA - Produce five Lots of FPAs to verify lot -to-lot repeatability of the process.</li> <li>-Two Color IRFPA - Complete the initial pilot production to verify repeatability of the production process.</li> <li>-Two Color IRFPA - Provide an insertion point with hardware to BMD elements.</li> <li>-Composite Canister - Focus on full-scale prototype manufacturing for testing by PAC3 and MEADS.</li> <li>-Composite Canister - Accomplish modeling and simulation for canister producibility analysis and produce sub -scale parts for optimization of processes.</li> <li>-Composite Canister - Target THAAD canister components for sub -scale prototyping.</li> <li>-DACS - Assess and identify producibility and manufacturing technologies associated with developing and producing propulsion components (nozzles, gas generators, injectors and flight controllers etc.) to support the risk reduction development of a DACS for missile defense interceptors.</li> <li>-DACS - Integrate components into a flight testable unit for hot fire test.</li> <li>-DACS - Initiate pilot production of SiC/SiC nozzles and components.</li> </ul> <p>FY2005 PLANNED PROGRAM:</p> <ul style="list-style-type: none"> <li>-AARILADAR - Develop a flight worthy package to be integrated with a passive IR seeker.</li> <li>-AARILADAR - Flight test a combined package on a representative interceptor to demonstrate actual IR to LADAR and -off, target discrimination and aim -points selection from launch through HTK.</li> <li>-AOP - Insertion point for the 1 GHz AOP into the BMD radars.</li> <li>-VLWIRFPA - Test integrated FPAs with ROICs that meet Radiation Hardening requirements for program elements.</li> <li>-VLWIRFPA - Test three lots of integrated parts to assure repeatability of process.</li> <li>-Composite Canister - Develop manufacturing processes for the common canister along with the evaluating and optimizing the production process through use of lean manufacturing techniques.</li> <li>-Composite Canister - Conduct testing of hardware produced under operational conditions.</li> </ul>		

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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-DACS -Continue to develop manufacturing technology refinements to the SiC/SiC components for midcourse and boost phase DACS components (nozzles, insulators, gas generators and valves).  
 -DACS -Support midcourse and boost phase missile interceptor DACS design programs.

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

	FY2002	FY2003	FY2004	FY2005
Radiation Hardened Electronics			9000	18000
RDT&E Articles (Quantity)				

FY2004 also begins the Multi-Year Radiation Hardened Electronics (RHE) program. This program will assure MDA of radiation hardened electronic device circuits required for constructing missile defense systems and assist in the continuation of the U.S. industrial base to design and manufacture these systems.

**FY2004 PLANNED PROGRAM:**

-RHE -Reinitiate activities with particular emphasis on analog devices (12/14 bit analog to digital converter and a 256 Kbit EEPROM).  
 -RHE -Initiate two approaches: use of a hard foundry and using specialized designs and processes at commercial foundry with smaller design rules to allow higher density electronics.

**FY2005 PLANNED PROGRAM:**

-RHE -Continue analog to digital converter work towards better signal precision and lower noise.  
 -RHE -Initiate effort to develop more powerful hard signal processors compared to the current state-of-the-art (603e and RH750) to allow faster processing of more complex algorithms and reduce the number of devices now planned for each of the elements.

**C. Other Program Funding Summary**

	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete	Total Cost
PE0603175C Ballistic Missile Defense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE0603869C Meads Concepts -Dem/Val	0	114781	0	0	0	0	0	0		
PE0603879C Advanced Concepts, Evaluations and Systems	0	0	151696	216778	166308	193949	241947	234484		
PE0603880C Ballistic Missile Defense System Segment	790535	1046652	0	0	0	0	0	0		
PE0603881C Ballistic Missile Defense Terminal Defense Segment	195800	136399	810440	924356	985514	805785	558071	371649		

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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PE0603882C Ballistic Missile Defense Midcourse Defense Segment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE0603883C Ballistic Missile Defense Boost Defense Segment	583463	718036	626264	653612	755163	665772	477109	354346		
PE0603884C Ballistic Missile Defense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE0603886C Ballistic Missile Defense System Interceptors	0	0	301052	541178	1127180	1729613	2558327	2904096		
PE0603888C Ballistic Missile Defense Test and Targets	0	0	611522	711181	661416	643302	639839	672396		
PE0603889C Ballistic Missile Defense Products	0	0	343644	384763	333636	343447	349335	360951		
PE0604861C Theater High -Altitude Area Defense System -TMD -EMD	818632	888323	0	0	0	0	0	0		
PE0604865C Patriot PAC -3 Theater Missile Defense Acquisition -EMD	130630	176155	0	0	0	0	0	0		
PE0604867C Navy Area Theater Missile Defense -EMD	96121	0	0	0	0	0	0	0		
PE0605502C Small Business Innovative Research -MDA	145102	0	0	0	0	0	0	0		
PE0901585C Pentagon Reservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE0901598C Management Headquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499		

**D. Acquisition Strategy**

Producibility and Manufacturing Technology adhere 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.

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MDAExhibitR -3RDT&EProjectCostAnalysis									Date February2003			
APPROPRIATION/BUDGETACTIVITY 4.AdvancedComponentDevelopmentandPrototypes(ACD&P)					R-INOMENCLATURE 0603890CBallisticMissileDefenseSystemCore							
<b>I.ProductDevelopmentCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalProductDevelopment												
<b>Remarks</b>												
<b>II.SupportCostsCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>Producibility&amp;MANTECH</b>												
AOP	Other	SMDC/AL				3000	2Q	2000		CONT.	5000	CONT.
2ColorIRFPA	Other	Navy/PA				2100	2Q	400	1Q	CONT.	2500	CONT.
VLWIRFPA	Other	SAF/AQ/NW				2000	2Q	0		CONT.	2000	CONT.
LADAR	MIPR	Fibertek,Inc./VA				3000	2Q	5000		CONT.	8000	CONT.
Composites/Composites	Various	Various/Various				3800	1Q	4500	1Q	CONT.	8300	CONT.
Producibility	Various	Services/TBD				1072	2Q	3167	1/2Q	CONT.	4239	CONT.
DACS	Other	Aerojet/CA				1947	2Q	1450	2Q	CONT.	3397	CONT.
SETA	CPAF	Sparta/VA				900	2Q	1000	2Q	CONT.	1900	CONT.
SETA	CPAF	Andrulis/VA				1400	2Q	1500	2Q	CONT.	2900	
<b>RadiationHardened Electronics</b>												
RHE	Other	TBD/TBD				8900	2Q	17500	2Q	CONT.	26400	CONT.
SubtotalSupportCosts			0	0		28119		36517			64636	
<b>Remarks</b>												

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MDAExhibitR -3RDT&EProjectCostAnalysis										Date February2003		
APPROPRIATION/BUDGETACTIVITY 4.AdvancedComponentDevelopmentandPrototypes(ACD&P)					R-1NOMENCLATURE 0603890CBallisticMissileDefenseSystemCore							
<b>III.Test andEvaluationCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>Producibility&amp;MANTECH</b>												
DACS	Other	Aerojet/CA				500	2Q	500	2Q	CONT.	1000	CONT.
MANTECH	Various	Various				1600	1/2Q	1500	1/2Q	CONT.	3100	CONT.
<b>RadiationHardened Electronics</b>												
RHE	Various	TBD/TBD				100	1/2Q	500	2Q	CONT.	600	CONT.
SubtotalTestandEvaluation			0	0		2200		2500			4700	
<b>Remarks</b>												
<b>IV.ManagementServicesCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>Producibility&amp;MANTECH</b>												
Gov'tPersonnel	Other	Various/VA				300	2Q	800	2Q	CONT.	1100	CONT.
ManagementServices	Various	Various/Various				150	1/2Q	150	1/2Q	CONT.	300	CONT.
SubtotalManagementServices			0	0		450		950			1400	
<b>Remarks</b>												
ProjectTotalCost			0	0		30769		39967			70736	
<b>Remarks</b>												

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<b>MDAExhibitR -4ScheduleProfile</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890CBallisticMis sileDefenseSystemCore</b>
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FiscalYear	2002				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	1	2	3	4				
<b>Producibility&amp;Mantech</b>																																				
AOP-CompleteBuiltpof1GHzAOP											△																									
Canisters-FabricationofMRPPprototype															△																					
DACS-FlightTestMidCourseTDACS											△																									
LADAR-IntegratePassiveandActive LADAR												△																								
TwoColorIRFPA-ConductPilot Production											△																									
VLWIRFPA-Test5lots192X192RHE															△																					
<b>RadiationHardened</b>																																				
RHE-ADCFabrication12bit10MSPS																																				
RHE2-SONOSEEPROMProduction 265kb											△																									

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MDAExhibitR -4AScheduleDetail						Date February2003		
APPROPRIATION/BUDGETACTIVITY 4.AdvancedComponentDevelopmentandPrototypes(ACD&P)				R-INOMENCLATURE 0603890CBallisticMissileDefenseSystemCore				
ScheduleProfile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
<b>Producibility&amp;Mantech</b>								
AOP -CompleteBuiltof1GHzAOP			2Q					
AOP -HWILTestReport			4Q					
AOP -HWILTestatLL/MITonrealtargets			3Q					
AOP -InsertionProgram				2Q				
AOP -MANT ECHProgram			4Q					
Canisters -FabricationofMRPPprototype				3Q				
Canisters -LowcostCanisterProductionforMDAPS			3Q					
DACS -FlightTestBoostPhaseTDACS				2Q				
DACS -FlightTestMidCourseTDACS			2Q					
LADAR -Develo pFlightLADAR			1Q-2Q					
LADAR -IntegratePassiveandActiveLADAR			3Q					
TestPrototypeMDAPSInsertionPlan			3Q-4Q					
TwoColorIRFPA -ConductPilotProduction			1Q					
VLWIRFPA -Complete192X192FPA Hybridization			3Q					
VL WIRFPA -Test5lots192X192RHE				2Q,3Q,4Q				
<b>RadiationHardened</b>								
RHE -ADCFabrication12bit10MSPS						3Q		
RHE -DACFirstPassFab14bit					1Q			
RHE -SONOSEEPROMFab1Mb					1Q			
RHE -ADCProduction14bit10MSPS					4Q			
RHE2 -SONOSEEPROMProduction265kb			2Q					

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>					Date <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>			
COST (\$ in Thousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
0105 Countermeasures/Counter -Countermeasures (CM/CCM)	0	0	48000	73441	94793	97594	146280	146126
RDT&E Articles Qty	0	0	0	0	0	0	0	0
<b><u>A. Mission Description and Budget Item Justification</u></b>								
<p>This Project was funded under PE0603882C (Midcourse Defense Segment), Project 3050, in FY2002. In FY2003, this Project was funded under PE0603880C (BMDS System), Project 105, and PE0603882C (Midcourse Defense Segment), Project 3050.</p> <p>The Missile Defense Agency's (MDA) Countermeasures/Counter -Countermeasures Program (CM/CCM) program was established to improve the capability of the Ballistic Missile Defense System (BMDS) against adversary ballistic missile employing countermeasures. Two adversary teams, Red and Black, assess the BMDS, determine the engineering -feasible range of approaches an adversary could use to defeat or degrade the BMDS, and develop conceptual countermeasures to implement those approaches. The two adversary teams operate with different perspectives: the Red Team is restricted to using only information on the BMDS available from open sources, while the Black Team develops countermeasures having complete access to all technical data on the BMDS. The concepts developed by the two adversary teams are reviewed by the White Team, a panel of senior technical experts, and the MDA Management Integration Board (MIB). The White Team provides MDA with an independent assessment of which countermeasures pose a high risk to the BMDS. The MIB may then select some or all of the adversary counter -measures for assessment and counter -countermeasure responses by the Blue Team.</p> <p>The Blue Team is comprised of BMDS system, element, and component technical experts. The Blue Team uses analytical models to assess the performance and technical risk to the BMDS from the countermeasure concepts. The Blue Team then proposes counter -countermeasures and implementation plans to improve the capability of the BMDS to mitigate the risk posed by each countermeasure. The Blue Team's risk assessments and counter -countermeasures are reviewed by the White Team and the MDAMIB.</p> <p>The CM/CCM program process allows management flexibility in the implementation of the Blue Team's risk mitigation strategies. The White Team and MIB can recommend action to begin immediate integration of a strategy into the BMDS via the Configuration Control process. The Configuration Control Board can then either direct a -advanced studies of the concept(s) be conducted, or initiate changes to the BMDS specification to incorporate the counter -countermeasure into the BMDS Block Development Program.</p> <p>The CM/CCM Program may also initiate a separate development effort for those risk mitigation strategies that are not sufficiently mature to be integrated directly into the BMDS. The Blue Team sponsors counter -countermeasure initiatives, funded by the CM/CCM Program, to rapidly develop and demonstrate counter -countermeasure concepts. The program's Tan and Green teams provide support to the Blue Team in testing and demonstrating the performance of its counter -countermeasures. The Tan Team develops and builds targets and payloads to implement the adversary teams' countermeasure concepts. The Green Team develops test plans, plans for test resources, executes tests, analyzes test results, and provides an independent assessment of the demonstration. Counter -countermeasures that successfully demonstrate a strong potential capability to mitigate the effects of countermeasures may then be brought to the Configuration Control process for integration into the BMDS Block Development Program.</p>								
<b><u>B. Accomplishments/Planned Program</u></b>								
	FY2002	FY2003	FY2004	FY2005				
Red Team					3000	3000		
RDT&E Articles (Quantity)								
FY2004 PLANNED PROGRAM -Update and maintain the open -sourced database on the BMDS								

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<b>MDAExhibitR -2ARDT&amp;EProjectJustification</b>			Date <b>February2003</b>	
<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes (ACD&amp;P)</b>		<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>		
<p>-Generatetwosetsofcountermeasuresagainsttheopensourcesystemarchitecture                      -Conductuptotwospecialstudiesonfeasibility,deployment,andcharacterizationofROWcountermeasureconcepts</p> <p><b>FY2005PLANNEDPROGRAM</b>                      -Continuetoupdateandmaintaintheopen-sourcedatabaseontheBMDS                      -Generatetwosetsofcountermeasuresagainsttheopensourcesystemarchitecture                      -Conductuptotwospecialstudiesonfeasibility,deployment,andcharacterizationofROWcountermeasureconcepts</p>				
	FY2002	FY2003	FY2004	FY2005
BlueTeam			33400	48841
RDT&EArticles(Quantity)				
<p><b>FY2004PLANNEDPROGRAM</b>                      CoreSupport:                      -InitiatesupportfromElementProgram OfficesandContractorsttoBlueTeamandCM/CCMProgramactivities                      AnalysisandPlanning:                      -PerformadvancedstudiestodevelopCCMmitigationoptions                      -PrepareandConductAdvancedStudyNoticesandAdvancedChangeNoticesforreviewbyConfigurationControlBoard                      CCMInitiatives:                      -BeginpreliminarydevelopmentforoneCCMinitiativetomitigateriskduetoaselectedadversaryteamCM</p> <p><b>FY2005PLANNEDPROGRAM</b>                      CoreSupport:                      -ContinuetosupportfromElementProgramOfficesandContractorsttoBlueTeamandCM/CCMProgramactivities                      AnalysisandPlanning:                      -ContinuetoperformadvancedstudiestodevelopCCMmitigationoptions                      -PrepareAdvancedStudyNoticesandAdvancedChangeNoticesforreviewbyConfigurationControlBoard                      CCMInitiatives:                      -Continue developmentofthefirstCCMinitiativetomitigateriskduetoaselectedadversaryteamCM                      -Initiateddevelopmentof2-3CCMinitiativestomitigatehigh-riskadversaryteamCMs</p>				
	FY2002	FY2003	FY2004	FY2005
BlackTeam			6400	6400
RDT&EArticles(Quantity)				
<p><b>FY2004PLANNEDPROGRAM</b>                      -Updatethe technicaldescriptionofthebaselineBMDS</p>				

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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-Generate two sets of countermeasures with threat risk assessments  
 -Modify and incorporate Red Team countermeasure concepts into Black Team countermeasures sets and MDA Adversary Capability Document  
 -Support Tan Team design of CM suite for the Critical Measurements Program's CMCM1 and CMCM2 flight tests in FY2005  
 -Perform two cycles of BMDS assessment by Independent Scientific and Engineering Group (ISEG) to identify system weaknesses, technical concerns, and block transition issues.

**FY2005 PLANNED PROGRAM**

-Continue to update the technical description of the baseline BMDS  
 -Generate two sets of countermeasures with threat risk assessments  
 -Continue to modify and incorporate Red Team countermeasure concepts into Black Team countermeasures sets and MDA Adversary Capability Document  
 -Support Tan Team design of CM suite for the Critical Measurements Program's FY2006 flight tests  
 -Perform two cycles of BMDS assessment by Independent Scientific and Engineering Group (ISEG) to identify system weaknesses, technical concerns, and block transition issues

	FY2002	FY2003	FY2004	FY2005
White Team			600	600
RDT&E Articles (Quantity)				

**FY2004 PLANNED PROGRAM**

-Review the adversary teams' countermeasures and Blue Team responses  
 -Provide independent assessments of teams' products to MDADirector

**FY2005 PLANNED PROGRAM**

-Continue to review the adversary teams' countermeasures and Blue Team responses  
 -Continue to provide independent assessments of teams' products to MDADirector

	FY2002	FY2003	FY2004	FY2005
Tan Team			4600	9600
RDT&E Articles (Quantity)				

**FY2004 PLANNED PROGRAM**

-Perform feasibility assessments of adversary teams' CM concepts in support of threat risk assessments  
 -Develop Level 2 design of a CM payload for the Critical Measurements Program FY2006 flight tests

**FY2005 PLANNED PROGRAM**

-Continue to perform feasibility assessments of adversary teams' CM concepts in support of threat risk assessments  
 -Develop and build CM payload for the Critical Measurements Program's CMCM1 and CMCM2 flight tests  
 -Develop Level 2 design of a CM payload for the Critical Measurements Program's FY2007 flight tests

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<b>MDAExhibitR -2ARDT&amp;EProjectJustification</b>			Date <b>February2003</b>	
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes (ACD&amp;P)</b>			<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>		
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	FY2002	FY2003	FY2004	FY2005
GreenTeam			0	5000
RDT&EArticles(Quantity)				

FY2005PLANNEDPROGRAM  
-SupportplanningandtestexecutionofCriticalMeasurementsProgram'sCMCM1andCMCM2flighttests

**C.OtherProgramFundingSummary**

	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete	Total Cost
PE0603175CBallisticMissileDefense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE0603869CMeadsConcepts -Dem/Val	0	114781	0	0	0	0	0	0		
PE0603879CAdvancedConcepts, EvaluationsandSystems	0	0	151696	216778	166308	193949	241947	234484		
PE0603880CBallisticMissileDefense SystemSegment	790535	1046652	0	0	0	0	0	0		
PE0603881CBallisticMissileDefense TerminalDefenseSegment	195800	136399	810440	924356	985514	805785	558071	371649		
PE0603882CBallisticMissileDefense MidcourseDefenseSegment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE0603883CBallisticMissileDefenseBoost DefenseSegment	583463	718036	626264	653612	755163	665772	477109	354346		
PE0603884CBallisticMissileDefense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE0603886CBallisticMissileDefense SystemInterceptors	0	0	301052	541178	1127180	1729613	2558327	2904096		
PE0603888CBallisticMissileDefenseTest andTargets	0	0	611522	711181	661416	643302	639839	672396		
PE0603889CBallisticMissileDefense Products	0	0	343644	384763	333636	343447	349335	360951		
PE0604861CTheaterHigh -AltitudeArea DefenseSystem -TMD -EMD	818632	888323	0	0	0	0	0	0		
PE0604865CPatriotPAC -3TheaterMissile DefenseAcquisition -EMD	130630	176155	0	0	0	0	0	0		

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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PE0604867C Navy Area Theater Missile Defense -EMD	96121	0	0	0	0	0	0	0	0		
PE0605502C Small Business Innovative Research -MDA	145102	0	0	0	0	0	0	0	0		
PE0901585C Pentagon Reservation	6381	7432	14481	13384	12758	12850	13158	13476			
PE0901598C Management Headquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499			

**D. Acquisition Strategy**

The Black, Red, Blue, and Tan Teams' execution of program activities is a collaborative effort involving subject matter experts composed of Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), and System Engineering and Technical Assistance (SETA). In addition, the Black and Blue Teams require extensive involvement by the major defense contractors responsible for the development of the BMDS, Elements, and major components. The involvement of industry is performed through the Blue Team. Blue Team CC initiatives will be executed by various labs and industry contractor through the MDA Advanced Systems Deputate. The Green Team is composed primarily of Government and SETA support from the MDA Test and Evaluation Deputate. Development of Tan Team target payloads is performed through the MDA Targets Prime Contractor.

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>										Date <b>February2003</b>		
<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>					<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>							
<b>I.ProductDevelopmentCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalProductDevelopment												
<b>Remarks</b>												
<b>II.SupportCostsCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>TanTeam</b>												
PayloadDesign/Development	MIPR	MDATargetsPrim e				2000	1Q	7000	1Q	CONT.	9000	
<b>GreenTeam</b>												
GreenTeam	MIPR	Various						5000	1/2Q	CONT.	5000	
<b>RedTeam</b>												
RedTeam	CPAF	CSC/VA				3000	2Q	3000	2Q	CONT.	6000	
<b>BlackTeam</b>												
BlackTeam	CPAF	Sparta/VA				1200	1/2Q	1200	1/2Q	CONT.	2400	
BlackTeam	FFP	Vanguard/VA				2100	1/2Q	2100	1/2Q	CONT.	4200	
BlackTeam	CPAF	CSC/VA				375	1Q	375	1Q	CONT.	750	
BlackTeam	Various	Various				1250	1/2Q	1250	1/2Q	CONT.	2500	
<b>BlueTeam</b>												
BlueTeamCoreSupport	MIPR	Various				17200	1/3Q	17200	1/3Q	CONT.	34400	
BlueTeamAnalysis&Planning	MIPR	Various				7800	1/3Q	10000	1/3Q	CONT.	17800	
BlueTeamCCMInitiatives	MIPR	Various				1400	1Q	14641	1/3Q	CONT.	16041	
SubtotalSupportCosts			0	0		36325		61766			98091	
<b>Remarks</b>												

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>										Date <b>February2003</b>		
<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>					<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>							
<b>III.TestandEvaluationCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalTestandEvaluation												
<b>Remarks</b>												
<b>IV.ManagementServicesCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY 2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>TanTeam</b>												
FeasibilityPanel	FFRDC	NM/CA/MA				2600	1Q	2600	1Q		5200	
<b>BlackTeam</b>												
BlackTeam	FFRDC	NM/CA/MA/VA				1475	1/2Q	1475	1/2Q	CONT.	2950	
<b>BlueTeam</b>												
BlueTeamAnalysis&Planning	FFRDC	MIT/LL/MA				7000	1/3Q	7000	1/3Q	CONT.	14000	
<b>WhiteTeam</b>												
WhiteTeam	MIPR	IDA/VA				600	1Q	600	1Q		1200	
SubtotalManagementS ervices			0	0		11675		11675			23350	
<b>Remarks</b>												
ProjectTotalCost			0	0		48000		73441			121441	
<b>Remarks</b>												

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<b>MDAExhibitR -4ScheduleProfile</b>	Date <b>February2003</b>
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APPROPRIATION/BUDGETACTIVITY <b>4. AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	R-INOMENCLATURE <b>0603890CBallisticMissileDefenseSystemCore</b>
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FiscalYear	2002				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	1	2	3	4				
<b>Deliveries</b>																																				
BlackTeamCMConcepts																																				
RedTeamCMConcepts																																				
TanTeamCMPayload																																				
TanTeamLevel2CMPayloadDesign																																				
<b>Studies&amp;Analyses</b>																																				
BlueTeamAssessments&CCMConcept Development																																				
RedTeamSpecialStudies																																				
TanTeamDevelopsCMPayload																																				
<b>FlightTests</b>																																				
GreenTeamCMFlightTest																																				

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MDAExhibitR -4AScheduleDetail						Date February2003		
APPROPRIATION/BUDGETACTIVITY 4.AdvancedComponentDevelopmentandPrototypes(ACD&P)				R-1NOMENCLATURE 0603890CBallisticMissileDefenseSystemCore				
ScheduleProfile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
<b>Deliveries</b>								
BlackTeamCM Concepts			1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q	1Q
BlackTeamtoProvideLevel1DesignstoTanTeam			2Q	2Q	2Q	2Q	2Q	2Q
BlueTmPrvdPerfmImpactstoThreatRisk Assessm			1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q
RedTeamCMConcepts			2Q-4Q	2Q-4Q	2Q-4Q	2Q-4Q	2Q-4Q	2Q-4Q
RedTeamtoDeliverSpecialStudiesReport				1Q	1Q	1Q	1Q	1Q
TanTeamCMPayload				1Q-3Q	1Q-3Q	1Q-3Q	1Q-3Q	1Q-3Q
TanTeamLevel2CMPayloadDesign			3Q-4Q	3Q-4Q	3Q-4Q	3Q-4Q	3Q-4Q	3Q-4Q
WhiteProvideIndependentAssessmentsMDA			1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q
<b>Studies&amp;Analyses</b>								
BlackTeamtoConductThreatRiskAssessment			1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q
BlueTeamAssessments&CCMConcept Development			2Q,4Q	2Q,4Q	2Q,4Q	2Q,4Q	2Q,4Q	2Q,4Q
BlueTeamDe velopsCCMConcepts&Plans			2Q,4Q	2Q,4Q	2Q,4Q	2Q,4Q	2Q,4Q	2Q,4Q
BlueTeamtoConductPerformanceAssessments			2Q,2Q,4Q,4Q	2Q,2Q,2Q,4Q	2Q,4Q	2Q	2Q,2Q,4Q	2Q,4Q
RedTeamSpecialStudies			3Q-4Q	3Q-4Q	3Q-4Q	3Q-4Q	3Q-4Q	3Q-4Q
TanTeamDevelopsCMPa yload				1Q-2Q	2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
TanTmAssessFeasibilityofBlackTMCM			1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q
<b>FlightTests</b>								
GreenTeamCMFlightTest				4Q	4Q	4Q	4Q	4Q

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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COST (\$ in Thousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
0202 Hercules Core	0	0	24079	22119	21628	21599	22013	25375
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

This Project was funded under PE0603880C (BMD System), Project 1050, for FY2002 and FY2003.

Project Hercules is a national effort to develop robust detection, tracking, and discrimination algorithms to counter off-nominal and evolving missile threats. Hercules is also developing a physics-based Decision Architecture, which applies advanced decision theory to future BMD command, control, and battle management (C2/BM) concepts. In addition to a general program to develop algorithms useful against targets in all phases of flight, Hercules has specific projects for developing algorithms for forward based sensors, the Decision Architecture, and mitigating countermeasures. Hercules develops algorithms to enhance BMD element capabilities in Block 04, 06, 08 and beyond and will provide these algorithms to the BMD elements for insertion into their respective programs.

**B. Accomplishments/Planned Program**

	FY2002	FY2003	FY2004	FY2005
Project Hercules			24079	22119
RDT&E Articles (Quantity)				

Project Hercules Core activities include the collection and analysis of flight tests, systems engineering, the Hercules Test Bed infrastructure and the development of models and simulations particular to the data projects ongoing within Hercules.

- 1) Hercules collects and analyzes flight data from throughout the MDA and channels this data into algorithm development by Hercules teams.
- 2) System engineering is performed by Hercules to ensure algorithms addressing specific enemy missile threats or phases of flight can be integrated into overarching algorithm concepts or C2/BM concepts such as the Decision Architecture.
- 3) Models and simulations are developed within Hercules to expand the ability of Hercules to address the off-nominal and evolving missile threats. The boost, midcourse, and terminal phase algorithm development teams and the forward based sensor, decision architecture and clutter mitigation teams all need advanced models and simulations to develop their algorithms.
- 4) Hercules maintains Test Beds for extensive characterizing of algorithms by a Hercules test team independent from Hercules developers.

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MDA Exhibit R -2 ARDT&E Project Justification								Date February 2003		
APPROPRIATION/BUDGET ACTIVITY 4. Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603890C Ballistic Missile Defense System Core					
C. Other Program Funding Summary										
	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete	Total Cost
PE0604867C Navy Area Theater Missile Defense -EMD	96121	0	0	0	0	0	0	0		
PE0604865C Patriot PAC -3 Theater Missile Defense Acquisition -EMD	130630	176155	0	0	0	0	0	0		
PE0605502C Small Business Innovative Research -MDA	145102	0	0	0	0	0	0	0		
PE0901585C Pentagon Reservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE0901598C Management Headquarters -MDA	30191	25365	93441	101373	114107	121743	128972	133499		
PE0603175C Ballistic Missile Defense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE0603869C Meads Concepts -Dem/Val	0	114781	0	0	0	0	0	0		
PE0603879C Advanced Concepts, Evaluations and Systems	0	0	151696	216778	166308	193949	241947	234484		
PE0603880C Ballistic Missile Defense System Segment	790535	1046652	0	0	0	0	0	0		
PE0603881C Ballistic Missile Defense Terminal Defense Segment	195800	136399	810440	924356	985514	805785	558071	371649		
PE0603882C Ballistic Missile Defense Midcourse Defense Segment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE0603883C Ballistic Missile Defense Boost Defense Segment	583463	718036	626264	653612	755163	665772	477109	354346		
PE0603884C Ballistic Missile Defense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE0603886C Ballistic Missile Defense System Interceptors	0	0	301052	541178	1127180	1729613	2558327	2904096		
PE0603888C Ballistic Missile Defense Test and Targets	0	0	611522	711181	661416	643302	639839	672396		
PE0603889C Ballistic Missile Defense Products	0	0	343644	384763	333636	343447	349335	360951		
PE0604861C Theater High -Altitude Area Defense System -TMD -E MD	818632	888323	0	0	0	0	0	0		

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>		Date <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603890C Ballistic Missile Defense System Core</b>	
<p><u><b>D. Acquisition Strategy</b></u></p> <p>Project Hercules follows MDA's capability -based acquisition strategy. This emphasizes assessment, spiral -development testing and evolutionary acquisition through the definition of two -year capability blocks.</p> <p>Project Hercules activities are performed by subject matter experts composed of Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), private industry including major defense contractors, Government laboratories, and System Engineering and Technical Assistance (SETA) contractors.</p> <p>Capabilities 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.</p>		

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>										Date <b>February2003</b>		
<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P )</b>					<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>							
<b>I.ProductDevelopmentCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalProductDevelopment												
<b>Remarks</b>												
<b>II.SupportCostsCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>ProjectHercules</b>												
ArmySMDC	Various	Army/Huntsville, AL				10539	1Q	9560	1Q	CONT.	20099	
SubtotalSupportCosts												
<b>Remarks</b>												
<b>III.TestandEvaluationCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>ProjectHercules</b>												
ArmySMDC	Various	Army/Huntsville, AL				10540	1Q	9559	1Q	CONT.	20099	CONT.
SubtotalT estandEvaluation												
<b>Remarks</b>												

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>	Date <b>February2003</b>
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P )</b>	<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>
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<b>IV.ManagementServicesCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>ProjectHercules</b>												
SETA	Other	Sparta/Rossllyn,VA				2000	1Q	2000	1Q	CONT.	4000	
SETA	Other	CSC/Rossllyn,VA				1000	1Q	1000	1Q	CONT.	2000	
SubtotalMa nagementServices			0	0		3000		3000			6000	

**Remarks**

ProjectTotalCost			0	0		24079		22119			46198	
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**Remarks**

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<b>MDAExhibitR -4ScheduleProfile</b>	Date <b>February2003</b>
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APPROPRIATION/BUDGETACTIVITY <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>	R-1NOMENCLATURE <b>0603890CBallisticMissileDefenseSystemCore</b>
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FiscalYear	2002				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	1	2	3	4				
<b>ProjectHercules</b>																																				
ProgramReview																																				

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<b>MDAExhibitR -4AScheduleDetail</b>						Date <b>February2003</b>		
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponent DevelopmentandPrototypes(ACD&amp;P)</b>				<b>R-1NOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>				
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ScheduleProfile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
<b>ProjectHercules</b>								
Pr ogramReview			1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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COST (\$ in Thousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
0106 Modeling and Simulation	0	0	98173	100199	101881	101650	106151	108060
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

This project was funded under PE0603880C (BMDS system), Project 1060, in FY2002 and FY2003.

The BMDS System Level Core Model and Simulation (M&S) Project provides for the development, maintenance, upgrades, verification and validation functions integrated into an MDA evolutionary block upgrade strategy for developing new missile defense capabilities and a responsive spiral development process within the block to support the evolutionary BMD capability -based process. BMD System level core models include the engineering, phenomenology, threat, lethality, scene generation, and multispectrum data products required to validate the set of tools in common and general use in all elements of the Ballistic Missile Defense System (BMDS). BMDS system level core hardware -in-the-Loop Tools (HWILT) support Missile Defense Integration Exercises (MDIE), and the engineering, development, and testing of BMDS integration and interoperability. Human/Operator -in-the-loop (HIL/O IL) tool support wargaming exercises and the development of new missile defense doctrine, Concepts of Operations (CONOPS) and Tactics, Techniques and Procedures (TTPs). Highly aggregated constructive models along with medium and high fidelity constructive models provide the capability to conduct long, medium, and short term BMD studies, analysis, tradespace options, doctrine development, logistics support and feasibility studies. This project also funds the development of applicable standards, improved automated support tools, information assurance, vulnerability assessments, a standards -based verification and validation (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.

A comprehensive BMDS System -level Core Model and Simulation program that manages the lifecycle of a verified and validated set of approved Core Models and Simulations (M&S) and system level M&S computational support facilities. These mission -focused BMDS System Level Core Models and Simulations are required for experimentation, studies, analysis, pre -and post -test evaluation activities that support the development of the BMDS, the Corporate Test Program and BMDS testing events in all three phases of the BMD development cycle: RDT&E, transition and operations and maintenance. This project provides for the software acquisition management, software engineering, program management, planning, coordination, interoperability, integration, information assurance, vulnerability assessment, verification and validation, and technical oversight of BMDS system level M&S.

The International Cooperative Model and Simulation program directly supports the development of two new international M&S initiatives, the Russian Federation and the Israeli ARROW program, and continuing support of fifteen existing international cooperative M&S initiatives. An information assurance program including vulnerability assessments supports all programs.

The System Level Core Model set provides representation of the elements systems in virtual and constructive M&S. At the required fidelities and resolutions to support the BMD evolutionary acquisition activities. These verified and validated tools provide the following capabilities: a hardware -in-the-loops simulation that will be expanded from the current theater focus to a system wide assessment tool; a HIL simulation to develop missile defense wargame execution and the development of CONOPS, TTPs, and doctrines supporting military utility; and a family of three constructive simulation to support studies, analysis, Combatant Commander Exercises, Operational test agencies, JTAMDO studies, and the International M&S program. This effort focuses M&S support in three major areas: assessments, development/modification, and program management for BMDS programs. M&S activities also funded by this project include support for the development, enhancement, and maintenance of the system -wide Test Beds and tools that provide the analysis, integration, demonstration, and performance verification for BMD systems, and support for initial defensive operations (IDO).

The System Level Threat, Signature, Environment and Lethality (TSEL) M&S are common-use physics -and engineering -level corporate assets which directly support the development of BMD elements systems, sub -systems and components. The Signature Models, Scene Generation, Threat models and Battlespace Environment Signature Tool Kit (BEST) activities will replace existing legacy models and provide high confidence signature prediction capability for active and passive electro -optical (EO) and radio frequency (RF) sensors used in BMD elements and systems. Both empirical and physics -based models and computer codes are developed, verified & validated, maintained, and distributed to provide high -confidence results. Legacy M&S will be maintained until replaced by the BEST and new Scene generation capabilities. These M&S support all test planning, test target design, sensor design/development/test, data and systems analysis, operational test and

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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evaluation, and algorithm development. The Adversarial Capability Document (ACD) Threat capability will be added to all core models. A centralized verification, validation, and accreditation (VV&A) program supports all Core models. The System Level Lethality Model activities provide model and simulation support for the MDA Corporate Lethality Program, test communities, the lethality community, approved operational uses and Homeland Defense. The Lethality program answers are the primary evaluation tool to determine the success or failure of a threat target intercept. This task supports the maintenance and enhancement of lethality models through the development of standard lethality threat -representative targets, the pre-flight prediction of tests and experiments to obtain lethality data and the incorporation of that data into the interceptor/target lethality models' design.

The System level M&S computational support facilities include the computing and networking infrastructure support for the Advanced Research Center/Simulation Center (ARC/SC). This task supports the operations and maintenance of computing resources for multiple Test Beds within the AR C and supercomputers and local and wide area networking capabilities within both the ARC and SC, supporting specific efforts including the concept exploration, development, and test of the BMDS.

This mission common task includes the government salaries and related support costs (e.g. rent, travel, supplies, etc.) for the Service Executing Agent (EA) government technical personnel, other than the PEO, directly supporting and assigned to the Testbed Product Office and the ARC/SC.

This project is conducted in accordance with DoD 5000.59, DoD Modeling and Simulation (M&S) Management, DoD 5000.61, DoD Verification, Validation and Accreditation, and DoD Manual Number 8510.1 - MDoD Information Technology Security Certification and Accreditation Process (DITSCAP. )

**B. Accomplishments/Planned Program**

	FY2002	FY2003	FY2004	FY2005
International Co-operative M&S			10910	10993
RDT&E Articles (Quantity)				

Includes International Cooperative M&S which supports the ARROW program's Israeli HWITLM&S tool and initiates a USM&S tool that the Russian Federation can use for ballistic missile modeling.

**FY2004 PLANNED PROGRAM**

- Support the Arrow -MDI Et est event
- Support the Russian Federation Exercise Program

**FY2005 PLANNED PROGRAM**

- Continue to support the Arrow -MDI Et est event
- Support the JUNIPER COBRA test events
- Continue to support the Russian Federation Exercise Program

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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	FY2002	FY2003	FY2004	FY2005
BMD System Level Core M&S			39589	41180
RDT&E Articles (Quantity)				

Provide BMD System Level M&S support for analysis, assessment, characterization, test, and International Cooperative Support: EADTB (used for PAC3 IOT&E); MDSE (used for HWITL 02a/PAC3 IOT&E); EADSIM (300+ users worldwide); CAPS (multi-user throughout MDA); and MDWAR.

**FY2004 PLANNED PROGRAM**

- Incorporate Block 2004 C2 BMC capabilities into the BMD System Level M&S
- Incorporate Block 2004 Communication capabilities into the BMD System Level M&S
- Incorporate Block 2004 BMDSElements system representations into the BMD System Level M&S
- Incorporate Block 2004 Target and Countermeasure capabilities into the BMD System Level M&S
- Support expanded M&S scenario development
- Manage a System Level Core M&S VV&A program
- Support System Engineering and Integration
- Support System Test and Evaluation
- Support International Cooperative M&S programs and Allied support
- Incorporate the ACD into the BMD System Level M&S
- Support Combatant Commanders Exercise program and Joint Warfighters support
- Support Missile Defense Wargames
- Continue to develop an M&S Information Assurance/Vulnerability Assessment Process

**FY2005 PLANNED PROGRAM**

- Continue to incorporate Block 2004 C2 BMC capabilities into the BMD System Level M&S
- Continue to incorporate Block 2004 Communication capabilities into the BMD System Level M&S
- Continue to incorporate Block 2004 BMDSElements system representations into the BMD System Level M&S
- Continue to incorporate Block 2004 Target and Countermeasure capabilities into the BMD System Level M&S
- Continue to support expanded M&S scenario development
- Continue to manage a System Level Core M&S VV&A program
- Continue to support System Engineering and Integration
- Continue to support System Test and Evaluation
- Continue to support International Cooperative M&S programs and Allied support
- Continue to incorporate the ACD into the BMD System Level M&S
- Continue to support Combatant Commanders Exercise program and Joint Warfighters support
- Continue to support Missile Defense Wargames
- Continue to develop an M&S Information Assurance/Vulnerability Assessment Process

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>			Date <b>February 2003</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>R-INOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>		
	FY2002	FY2003	FY2004	FY2005
System Level Threat, Signature, Environment and Lethality (TSEL) M&S			28546	28765
RDT&E Articles (Quantity)				
<p>Provides for BMDS System Engineering M&amp;S such as: BEST to upgrade legacy model to current S/W methods and processes to include interoperability between the models; incorporating the ACD into the threat models, scene generation, Lethality models (Peels/PEGEM/Kidd) used throughout MDA; and Process and V&amp;V activity (S/W acquisition) in support of IN/SPC (JNIC).</p> <p><b>FY2004 PLANNED PROGRAM</b></p> <ul style="list-style-type: none"> <li>- BMDS System Level TSEL M&amp;S support to development of Block 2004 C2 BMC capabilities</li> <li>- BMDS System Level TSEL M&amp;S support to development of Block 2004 BMDSElements systems</li> <li>- BMDS System Level TSEL M&amp;S support to development of Block 2004 Target and Countermeasure capabilities</li> <li>- BMDS System Level TSEL M&amp;S support to development of expanded M&amp;S Scenario development</li> <li>- System Level Core M&amp;S VV&amp;A programs supporting development of the System Level TSEL M&amp;S</li> <li>- TSEL M&amp;S support to System Engineering and Integration</li> <li>- TSEL M&amp;S support to System Test and Evaluation</li> <li>- TSEL M&amp;S support to International Cooperative M&amp;S programs and Allied support</li> <li>- Develop an M&amp;S Information Assurance/Vulnerability Assessment Process</li> </ul> <p><b>FY2005 PLANNED PROGRAM</b></p> <ul style="list-style-type: none"> <li>- Continue BMDS System Level TSEL M&amp;S support to development of Block 2004 C2 BMC capabilities</li> <li>- Continue BMDS System Level TSEL M&amp;S support to development of Block 2004 BMDSElements systems</li> <li>- Continue BMDS System Level TSEL M&amp;S support to development of Block 2004 Target and Countermeasure capabilities</li> <li>- Continue BMDS System Level TSEL M&amp;S support to development of expanded M&amp;S Scenario development</li> <li>- Continue System Level Core M&amp;S VV&amp;A programs supporting development of the System Level TSEL M&amp;S</li> <li>- Continue TSEL M&amp;S support to System Engineering and Integration</li> <li>- Continue TSEL M&amp;S support to System Test and Evaluation</li> <li>- Continue TSEL M&amp;S support to International Cooperative M&amp;S programs and Allied support</li> <li>- Continue to Develop an M&amp;S Information Assurance/Vulnerability Assessment Process</li> </ul>				
	FY2002	FY2003	FY2004	FY2005
System Model Program Spt			5280	5303
RDT&E Articles (Quantity)				
<p>System Model Program Support provides for VV&amp;A and Anchoring - incorporate approach to VV&amp;A and assisting international partners in anchoring their models using EADSIM, CAPS, MDSE, EADTB, and Lethality M&amp;S.</p> <p><b>FY2004 PLANNED PROGRAM</b></p> <ul style="list-style-type: none"> <li>- Improve/enhance the system Core Model VV&amp;A program</li> </ul>				

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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-Improve/enhance the system Core Model Information Assurance/Vulnerability program  
 -Improve/enhance the system Core Model Data management process for M&S validation

**FY2005 PLANNED PROGRAM**  
 -Continue to improve/enhance the system Core Model VV&A program  
 -Continue to improve/enhance the system Core Model Information Assurance/Vulnerability program  
 -Continue to improve/enhance the system Core Model Data management process for M&S validation

	FY2002	FY2003	FY2004	FY2005
ARC/SC			13848	13958
RDT&E Articles (Quantity)				

Operations and Sustainment of the Advanced Research Center/Simulation Center in Huntsville, AL.

**FY2004 PLANNED PROGRAM**  
 -Improve/enhance the ARC support for the BMDS  
 -Improve/enhance the SC support for the BMDS

**FY2005 PLANNED PROGRAM**  
 -Continue to improve/enhance the ARC support for the BMDS  
 -Continue to improve/enhance the SC support for the BMDS

**C. Other Program Funding Summary**

	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete	Total Cost
PE0603869C Meads Concepts -Dem/Val	0	114781	0	0	0	0	0	0		
PE0603175C Ballistic Missile Defense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE0603879C Advanced Concepts, Evaluations and Systems	0	0	151696	216778	166308	193949	241947	234484		
PE0603880C Ballistic Missile Defense System Segment	790535	1046652	0	0	0	0	0	0		
PE0603881C Ballistic Missile Defense Terminal Defense Segment	195800	136399	810440	924356	985514	805785	558071	371649		
PE0603882C Ballistic Missile Defense Midcourse Defense Segment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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PE0603883C Ballistic Missile Defense Boost Defense Segment	583463	718036	626264	653612	755163	665772	477109	354346		
PE0603884C Ballistic Missile Defense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE0603886C Ballistic Missile Defense System Interceptors	0	0	301052	541178	1127180	1729613	2558327	2904096		
PE0603888C Ballistic Missile Defense Test and Targets	0	0	611522	711181	661416	643302	639839	672396		
PE0603889C Ballistic Missile Defense Products	0	0	343644	384763	333636	343447	349335	360951		
PE0604861C Theater High -Altitude Area Defense System -TMD -EMD	818632	888323	0	0	0	0	0	0		
PE0604865C Patriot PAC -3 Theater Missile Defense Acquisition -EMD	130630	176155	0	0	0	0	0	0		
PE0604867C Navy Area Theater Missile Defense -EMD	96121	0	0	0	0	0	0	0		
PE0605502C Small Business Innovative Research -MDA	145102	0	0	0	0	0	0	0		
PE0901585C Pentagon Reservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE0901598C Management Headquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499		

**D. Acquisition Strategy**

The majority of M&S support is performed in Huntsville at the ARC/SC, PEOAMD, SMDC, Redstone Arsenal, various BMD program offices, in Colorado at the JNIC, and at other DoD and private sector contractor Test Bed facilities. The ARC/SC contractor operates under a Cost Plus Fixed Fee (CPFF) contract first awarded in June of 1989.

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MDA Exhibit R - 3RDT&E Project Cost Analysis										Date February 2003		
APPROPRIATION/BUDGET ACTIVITY 4. Advanced Component Development and Prototypes (ACD&P)					R-INOMENCLATURE 0603890C Ballistic Missile Defense System Core							
<b>I. Product Development Cost (\$in Thousands)</b>												
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Product Development												
<b>Remarks</b>												
<b>II. Support Costs Cost (\$in Thousands)</b>												
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ARC/SC												
ARC/SC	Various	SMDC/AL				12233	1/2Q	12327	1/2Q	CONT.	24560	
Subtotal Support Costs			0	0		12233		12327			24560	
<b>Remarks</b>												
<b>III. Test and Evaluation Cost (\$in Thousands)</b>												
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>International Co-operative M&amp;S</b>												
Int'l Coop M&S	Various	PMS422/VA				333	1Q	336	1Q	CONT.	669	
Int'l Coop M&S	Various	PEOAMD/AL				1819	1/2Q	1833	1/2Q	CONT.	3652	
Int'l Coop M&S	Various	MDA/VA				6775	1/2Q	6826	1/2Q	CONT.	13601	
Int'l Coop M&S	Various	JNIC/CO				249	1Q	251	1Q	CONT.	500	
<b>BMD System Level Core M&amp;S</b>												
BMD Sys Level Core M&S	Various	SMDC/AL				9609	1/2Q	10010	1/2Q	CONT.	19619	
BMD Sys Level Core M&S	Various	PMS422/VA				636	1Q	663	1Q	CONT.	1299	
BMD Sys Level Core M&S	Various	AF				530	1Q	553	1Q	CONT.	1083	
BMD Sys Level Core M&S	Various	PEOAMD/AL				6630	1/2Q	6906	1/2Q	CONT.	13536	

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MDAExhibitR -3RDT&EProjectCostAnalysis								Date February2003				
APPROPRIATION/BUDGETACTIVITY 4.AdvancedComponentDevelopmentandPrototypes(ACD&P)						R-INOMENCLATURE 0603890CBallisticMissileDefenseSystemCore						
BMDSysLevelCoreM&S	Various	NAVY				334	1Q	348	1Q	CONT.	682	
BMDSysLevel CoreM&S	Various	MDA/VA				11013	1/2Q	11472	1/2Q	CONT.	22485	
BMDSysLevelCoreM&S	Various	JNIC/CO				9102	1/2Q	9481	1/2Q	CONT.	18583	
<b>SystemLevelThreat, Signature,Environment,and Lethality(TSEL)M&amp;S</b>												
SystemTSELM&S	Various	SMDC/AL				4025	1/2Q	4055	1/2Q	CONT.	8080	
SystemTSELM&S	Various	AF				3881	1/2Q	3911	1/2Q	CONT.	7792	
SystemTSELM&S	Various	NAVY				6561	1/2Q	6611	1/2Q	CONT.	13172	
SystemTSELM&S	Various	MDA/VA				12345	1/2Q	12440	1/2Q	CONT.	24785	
<b>SystemModelProgramSp t</b>												
SysModelPrgmSpt	Various	SMDC/AL				618	1Q	618	1Q	CONT.	1236	
SysModelPrgmSpt	Various	AF				487	1Q	489	1Q	CONT.	976	
SysModelPrgmSpt	Various	PEOAMD/AL				568	1Q	570	1Q	CONT.	1138	
SysModelPrgmSpt	Various	MDA/VA				1545	1Q	1549	1Q	CONT.	3094	
SysModelPrgmSpt	Various	JNIC/CO				328	1Q	329	1Q	CONT.	657	
SubtotalTestandEvaluation			0	0		77388		79251			156639	
<b>Remarks</b>												
<b>IV.ManagementServicesCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>InternationalCo -operative M&amp;S</b>												
SupportContracts	Various	BAH,VA				1734	1/2Q	1747	1/2Q	CONT.	3481	
<b>BMDSystemLevelCoreM&amp;S</b>												
SupportContracts	Various	BAH,VA				1735	1/2Q	1747	1/2Q	CONT.	3482	
<b>SystemTSELM&amp;S</b>												
SupportContracts	Various	BAH,VA				1734	1/2Q	1748	1/2Q	CONT.	3482	
<b>SystemM odelProgramSpt</b>												
SupportContracts	Various	BAH,VA				1734	1/2Q	1748	1/2Q	CONT.	3482	

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>										Date <b>February2003</b>	
<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>					<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>						
<b>ARC/SC</b>											
Gov`Personnel	Various	SMDC/AL				1615	1Q	1631	1Q	CONT.	3246
SubtotalManagementServices			0	0		8552		8621			17173
<b>Remarks</b>											
ProjectTotalCost			0	0		98173		100199			198372
<b>Remarks</b>											



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MDAExhibit R -4AScheduleDetail						Date February2003		
APPROPRIATION/BUDGETACTIVITY 4.AdvancedComponentDevelopmentandPrototypes(ACD&P)				R-1NOMENCLATURE 0603890CBallisticMissileDefenseSystemCore				
ScheduleProfile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Blockbuilds/SpiralReleasesofCAPS			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Blockbuilds/SpiralReleasesofMDWAR(HIL)			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Blockbuilds/SpiralReleasesEADSIM			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Blockbuilds/SpiralReleasesEADTB			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Blockbuilds/SpiralReleasesMDSE(HWIL)			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Blockbuilds/SpiralReleasesBEST			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Blockbuilds/SpiralReleasesofThreat(ACD)			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Blockbuilds/SpiralReleasesLe thalityModels			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
SupportARROW -MDIEevents			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
SupportSystemWargameevents			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
SupportUS/RFevents			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Blockbuilds/SpiralReleasesofSceneGeneration			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Blockbuilds/SpiralReleasesofMDSE -Arrow			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Blockbuilds/SpiralReleasesofUS/RFM&S			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
MaintenanceReleasesofLegacyTSELM&S			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
<b>Studies&amp;Analyses</b>								
CoreModelRequirementsCall			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
VV&A/M&SStudies,Analysis,Plans,Accreditations			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
VulnerabilityAssessments(IAProgram)			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
FederationStudies/Analysis			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
InternationalM&SProgramSupport			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
CombatantCommanderExerciseSupport			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
SIT/CMP/SIFTDataValidationActivities			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
TransitionPhaseSupport(OTASupport)			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
O&MPhaseSupport(ILS,Training,Maint)			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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COST (\$ in Thousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
0104 BMD Information Management Systems	0	0	31364	33161	34378	36562	42759	44300
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

This Project was funded under PE0603880C (BMDS system), Project 1050, and PE0603882C (Midcourse Defense Segment), Project 3050, in FY 2002. In FY 2003, this project was funded under PE0603880C (BMDS system), Project 1050.

The BMD Information Management System (IMS), executed by the Chief Information Office, consists of three major initiative areas: 1) Enterprise Information Management/Information Technology (IM/IT) Architecture and Engineering, 2) Enterprise Information Management, and 3) Enterprise Plans, Policies and Analyses. BMDIMS also supports Executing Agent projects related to MDA Enterprise IM/IT projects.

The Chief Information Office is responsible for planning to improve the management of and access to data, information, and knowledge throughout the Missile Defense (MD) enterprise. The Chief Information Officer (CIO) is responsible to the Director, MDA for the MDA information management and information technology including information architectures, policies, plans, processes, and procedures in accordance with the existing statutes and DoD regulations. The CIO assists in acquisition of missile defense systems by:

- Developing enterprise architectures that identify information needs, solutions and standards for both business and mission MD activities;
- Providing guidance, planning, oversight, and monitoring to enable the MD enterprise with IM and IT capabilities to comply with statutes, regulations, directives, and policies;
- Establishing IT/IM policies, processes and infrastructure throughout the MD enterprise that allows IM/IT operations to be performed in an efficient, secure, and effective manner;
- Creating an MD Enterprise Information Management System that allows both information sharing and decision support using web-based technologies;
- Establishing electronic business practices and processes that help achieve more effective and more efficient and secure business and mission activities throughout the MD enterprise; and Improving the IM/IT infrastructure that supports the design, development, and testing of MDA systems.

**B. Accomplishments/Planned Program**

	FY2002	FY2003	FY2004	FY2005
Enterprise IM/IT Architecture and Engineering			6275	2850
RDT&E Articles (Quantity)				

Discussion: The Enterprise IM/IT Architecture and Engineering initiative focuses on providing architecture and engineering support to design, develop and deploy prototypes of the MD Enterprise Information Management System including designing MD Wide Area Network (WAN) improvements, instituting Enterprise Security, and upgrading Virtual Data Center (VDC) global and regional connectivity. The DoD Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Framework is the model being used to develop an MDA Enterprise Information Architecture.

**FY2004 Planned Program:**

- Design and transfer MDA network connections from the existing Office of the Secretary of Defense (OSD) backbone to secure network connections to external sites that allow for greater bandwidth and improved access to sites external to MDA in the National Capital Region via the MD WANs.
- Initiate IT Network Prototyping to support the modernization of the MD IT Infrastructure.
- Continue providing enterprise communications and management funding for the Defense Information System Agency (DISA), WAN modernization, Hercules and MDA Net costs.

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>			Date <b>February 2003</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>		
<p>-Develop guidance for the MDA Security (MDA/SC) directorate, and the Resource Management Telecommunications (RMT) directorate and the eServices to help ensure that Information Assurance (IA) requirements are redesigned and implemented.</p> <p>FY2005 Planned Program: -Develop a baseline that reflects the existing infrastructure and develop MDA information "target" architectures that are consistent with the Global Information Grid (GIG) architecture.</p>				
	FY2002	FY2003	FY2004	FY2005
Enterprise Information Management			22548	27689
RDT&E Articles (Quantity)				
<p>Discussion: The MD Enterprise Information Management initiative consists of several projects including: design and prototyping of enterprise information applications which will be used to collect, analyze and display essential program status and decisions support information; an example is the MD Enterprise Portal project which provides easy access to MDA program data, administrative information, collaboration tools, and decisions support tools; and the BMD Information Resources Center (BIRC), which contains technical information as well as providing research support for accessing M D information. The MDD Data Center Program provides access to the investment of years of vital MD data such as: architecture/systems engineering data; wargaming, modeling and simulations; science and technology data centers; and flight test data, program data including financial; contracts administrative and personnel; and MD historical data. This data is made available to the MD community through use of an MD Enterprise Portal using decisions support tools and collaboration tools that are constantly evolving and being improved. The function of the VDC is to provide for timely sharing of MD technical data, knowledge and expertise across the MD community using information technology tools. The VDC extends the physical Data Center infrastructure to provide connectivity to subject matter experts in government and contractor facilities throughout the U.S. using a full spectrum of collaborative tools, web technology, video conferencing, visualization tools, and documents sharing.</p> <p>FY2004 Planned Program: -Provide funding for the BIRC which serves as a central resource to assist in locating missile defense related scientific and technical information. It is furnished with a fully automated library automated information system (AIS) both classified and unclassified data. -Provide funding to support expanding the BIRC mission to include technical library capability with MD information gathering and dissemination throughout the MD community. -Continue funding the Scientific and Technical Data Centers and Virtual Data Centers (VDC) program for acquiring, storing and distributing relevant BMD mission-related data in a secure manner throughout the MD Enterprise. They include the Missile Defense Data Center (MDDC), a component of the US Army Space and Missile Defense Command (USASMDC), the Advanced Missile Signature Center (AMSC) a component of the US Air Force, and the Joint National Integration Center (JNIC). See Section E. "Major Performers" for a description of the Executing Agents' efforts.</p> <p>FY2005 Planned Program: -Continue to provide executing Agents funding for Data Centers and VDC operations.</p>				
	FY2002	FY2003	FY2004	FY2005
Enterprise Plans, Policies, and Analyses			2541	2622
RDT&E Articles (Quantity)				
<p>Discussion: This initiative provides for development and implementation of IM/IT policies and processes to ensure efficient and effective management of information resources in accordance with statutes and DoD policy. It includes planning, budgeting, policies and processes including configuration control, and performance metrics for IM/IT activities.</p>				

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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**FY2004 Planned Program:**

- Initiate a Capital Planning and Investment Control (CPIC) using OMB guidelines including business case development and assessments.
- Continue to provide assistance in preparing for MDA Corporate Boards and a CIO Advisory Committee (CAC).
- Update the MD Enterprise IM/IT Program Plan

**FY2005 Planned Program:**

- Update the Capital Planning and Investment Control (CPIC) using OMB guidelines including business case development and assessments.
- Continue to provide assistance in preparing for MDA Corporate Boards and a CIO Advisory Committee (CAC).
- Review/update the MD Enterprise IM/IT Program Plan

**C. Other Program Funding Summary**

	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete	Total Cost
PE0603886C Ballistic Missile Defense System Interceptors	0	0	301052	541178	1127180	1729613	2558327	2904096		
PE0603888C Ballistic Missile Defense Test and Targets	0	0	611522	711181	661416	643302	639839	672396		
PE0603889C Ballistic Missile Defense Products	0	0	343644	384763	333636	343447	349335	360951		
PE0604861C Theater High -Altitude Area Defense System -TMD -EMD	818632	888323	0	0	0	0	0	0		
PE0604865C Patriot PAC -3 Theater Missile Defense Acquisition -EMD	130630	176155	0	0	0	0	0	0		
PE0604867C Navy Area Theater Missile Defense -EMD	96121	0	0	0	0	0	0	0		
PE0605502C Small Business Innovative Research -MDA	145102	0	0	0	0	0	0	0		
PE0901585C Pentagon Reservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE0901598C Management Headquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499		
PE0603884C Ballistic Missile Defense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE0603869C Meads Concepts -Dem/Val	0	114781	0	0	0	0	0	0		
PE0603175C Ballistic Missile Defense Technology	145021	151130	240820	205791	200956	247990	287864	306472		

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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PE0603879C Advanced Concepts, Evaluations and Systems	0	0	151696	216778	166308	193949	241947	234484		
PE0603880C Ballistic Missile Defense System Segment	790535	1046652	0	0	0	0	0	0		
PE0603881C Ballistic Missile Defense Terminal Defense Segment	195800	136399	810440	924356	985514	805785	558071	371649		
PE0603882C Ballistic Missile Defense Midcourse Defense Segment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE0603883C Ballistic Missile Defense Boost Defense Segment	583463	718036	626264	653612	755163	665772	477109	354346		

**D. Acquisition Strategy**

The MD Enterprise Information Management System acquisition strategy 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.

FY2004 activities will be focused on enhancing the MD Enterprise Information Management System by utilizing emerging technologies to meet requirements for both business and mission information systems. FY2004 activities will also include deployment of the knowledge management (KM) capability across the enterprise, the refinement of KM repositories, portal access, and security.

FY2005 and beyond improvements to the BMD Information Management System will be defined based on the Enterprise Information Architecture results.

MDA/CI uses contracts support services to manage the development and implementation of the MDA Enterprise IM system. MDA also uses Executing Agents to help accomplish the IM/IT mission. These Executing Agents operate under the cognizant authority of their individual Services (e.g. Army, Navy, and Air Force). Executing Agent funding is included in the Enterprise Information Management task. The following is a list of the major performers that contribute to the execution of the MDA/CI program.

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MDAExhibitR -3RDT&EProjectCostAnalysis									Date February2003			
APPROPRIATION/BUDGETACTIVITY 4.AdvancedComponentDevelopmentandPrototypes(ACD&P)					R-INOMENCLATURE 0603890CBallisticMissileDefenseSystemCore							
<b>I.Produ ctDevelopmentCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
SubtotalProductDevelopment												
<b>Remarks</b>												
<b>II.SupportCostsCost(\$inThousands)</b>												
CostCategories:	Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY20 04 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract
<b>EnterpriseIM/ITArchitecture andEngineering</b>												
EntIM/ITArch.&Engineering	MIPR	FEDSIM/SRA/VA				5450	1Q	2000	1Q	CONT.	7450	
EntIM/ITArch. &Engineering	MIPR	DISA				825	1Q	850	1Q	CONT.	1675	
<b>EnterpriseInformation Management</b>												
EnterpriseInfoMgt	MIPR	FEDSIM/SRA/VA				4299	1Q	9014	4Q	CONT.	13313	
EnterpriseInfoMgt	C/CPAF	AMSC/AL				2624	3Q	2401	3Q	CONT.	5025	
EnterpriseInfo Mgt	C/CPAF	MDDC/AL				4222	2Q	3863	2Q	CONT.	8085	
EnterpriseInfoMgt	C/CPFF	JNIC/CO				1966	2Q	1799	2Q	CONT.	3765	
EnterpriseInfoMgt	MIPR	Various				587	1/4Q	537	1/4Q	CONT.	1124	
EnterpriseInfoMgt	C/CPAF	PEOAMD/AL				1428	1Q	1449	1Q	CONT.	2877	
EnterpriseInfoMgt	C/CPAF	SMDC/AL				4628	3Q	4678	3Q	CONT.	9306	
EnterpriseInfoMgt	BPA	USAF/VA				624	1Q	948	1Q	CONT.	1572	
EnterpriseInfoMgt	C/CPFF	DRC/VA				2170	2Q	3000	2Q	CONT.	5170	
<b>EnterprisePlans,Policies,and Analyses</b>												
Ent.Pla nsPolicies&Analyses	Various	Various				2541	1Q	2622	1Q	CONT.	5163	
SubtotalSupportCosts			0	0		31364		33161			64525	
<b>Remarks</b>												

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<b>MDAExhibitR -3RDT&amp;EProjectCostAnalysis</b>										Date <b>February2003</b>		
<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>					<b>R-1NOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>							
<b>III.TestandEvaluationCost(\$inThousands)</b>												
Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract	
CostCategories:												
SubtotalTestandEvaluation												
<b>Remarks</b>												
<b>IV.ManagementServicesCost(\$in Thousands)</b>												
Contract Method &Type	Performing Activity& Location	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Costto Complete	Total Cost	Target Valueof Contract	
CostCategories:												
SubtotalManagementServices												
<b>Remarks</b>												
ProjectTotalCost			0	0		31364		33161			64525	
<b>Remarks</b>												



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MDAExhibitR -4AScheduleDetail						Date February2003		
APPROPRIATION/BUDGETACTIVITY 4.AdvancedComponentDevelopmentandPrototypes(ACD&P)				R-1NOMENCLATURE 0603890CBallisticMissileDefenseSystemCore				
ScheduleProfile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
<b>EnterpriseArchitectureandEngineering</b>								
DevelopToBeMDEnterpriseInfoArch			1Q-4Q					
ImplementWebExchangewithRemoteAccess				1Q-4Q	1Q-3Q			
Mgmt&OversightofEnterpriseNetworkMgmtCtr			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q
MgmtandOversightofIAOC			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
PilotTestClassifiedVPNforWindowsXP			1Q-4Q	1Q-4Q				
PilotTestandEvaluateClassifiedVPN			1Q-4Q					
ProvideBackupCapabilityforMissionCriticalSys			1Q-4Q	1Q-4Q	1Q-4Q			
TransferMDACircuitstoDISA			1Q-4Q	1Q-4Q	1Q-4Q			
<b>EnterpriseInformationManagement</b>								
ContinueWebPortalSpiralUpdates			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
EstablishInfrastructureforIM/KMSharing			1Q-4Q	1Q-4Q	1Q-3Q			
EstablishanExecutive -LevelInformationSystem			1Q-4Q	1Q-4Q	1Q-3Q			
ExpandVirtualCollaborationToolset			1Q-4Q	1Q-4Q	1Q-4Q			
ExpanduseofCollaborationTools			1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q		
IncreaseElectronicVDCAccessstoTestData			1Q-4Q	1Q-4Q				
InitiatePhaseofIM/KM			1Q-2Q					
IntegrateBIRC'scardcatalogandlinktoIM/KM			1Q-4Q	1Q-4Q				
InterfaceAdd'lDataCtrswithExistingDataCtrs			1Q-4Q	1Q-3Q				
<b>EnterprisePlans,Policies,andAnalyses</b>								
EstablishSoftwareDevelopmentLifecyclePolicies			1Q-4Q					
InstituteCapitalPlanningandInvestmentProcess			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
UpdateInfoSecurityApproachw/evolvingDoD Stnds			1Q-4Q	1Q-4Q				
UpdateMDEnterpriseIM/ITProgramPlan			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
U pdatetheDataManagementPlan			1Q-2Q					

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>	Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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COST (\$ in Thousands)	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
0602 Program Operations	0	0	8400	8532	9778	10041	10446	10882
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

Transferred in from the Ballistic Missile Defense System Segment Program Element 0603880C.

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 estimation; 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 fluctuation 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 Operation efforts.

**B. Accomplishments/Planned Program**

	FY2002	FY2003	FY2004	FY2005
Personnel			2800	2844
RDT&E Articles (Quantity)				

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

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<b>MDA Exhibit R -2 ARDT&amp;E Project Justification</b>		Date <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>4. Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-INOMENCLATURE</b> <b>0603890C Ballistic Missile Defense System Core</b>
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	FY2002	FY2003	FY2004	FY2005
Management Support			2800	2844
RDT&E Articles (Quantity)				

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.

	FY2002	FY2003	FY2004	FY2005
Fiscal Requirements			2800	2844
RDT&E Articles (Quantity)				

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

**C. Other Program Funding Summary**

	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete	Total Cost
PE0603869C Meads Concepts -Dem/Val	0	114781	0	0	0	0	0	0		
PE0603175C Ballistic Missile Defense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE0603879C Advanced Concepts, Evaluations and Systems	0	0	151696	216778	166308	193949	241947	234484		
PE0603880C Ballistic Missile Defense System Segment	790535	1046652	0	0	0	0	0	0		
PE0603881C Ballistic Missile Defense Terminal Defense Segment	195800	136399	810440	924356	985514	805785	558071	371649		
PE0603883C Ballistic Missile Defense Boost Defense Segment	583463	718036	626264	653612	755163	665772	477109	354346		
PE0603884C Ballistic Missile Defense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE0603886C Ballistic Missile Defense System Interceptors	0	0	301052	541178	1127180	1729613	2558327	2904096		

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<b>MDAExhibitR -2ARDT&amp;EProje ctJustification</b>							Date <b>February2003</b>			
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<b>APPROPRIATION/BUDGETACTIVITY</b> <b>4.AdvancedComponentDevelopmentandPrototypes(ACD&amp;P)</b>					<b>R-INOMENCLATURE</b> <b>0603890CBallisticMissileDefenseSystemCore</b>					
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PE0603888CBallisticMissileDefenseTest andTargets	0	0	611522	711181	661416	643302	639839	672396		
PE0603889CBallisticMissileDefense Products	0	0	343644	384763	333636	343447	349335	360951		
PE0604861CTheaterHigh -AltitudeArea DefenseSystem -TMD -EMD	818632	888323	0	0	0	0	0	0		
PE0604865CPatriotPAC -3TheaterMissile DefenseAcquisition -EMD	130630	176155	0	0	0	0	0	0		
PE0604867CNavyAreaTheaterMissile Defense -EMD	96121	0	0	0	0	0	0	0		
PE0605502CSmallBusinessInnovative Research -MDA	145102	0	0	0	0	0	0	0		
PE0901585CPentagonReservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE0901598CManagementHeadquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499		
PE0603882CBallisticMissileDefense MidcourseDefenseSegment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		