MDA Exhibit R-2 RDT&E Budget Item Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

COST ($ in Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	0	0	301052	541178	1127180	1729613	2558327	2904096
0913 Ballistic Missile Defense Interceptors Block 2008	0	0	295542	528774	1013408	1562482	1938694	1889902
0013 Ballistic Missile Defense Interceptors Block 2010	0	0	0	0	97335	146391	585119	974176
0602 Program Operations	0	0	5510	12404	16437	20740	34514	40018

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) has created the Ballistic Missile Defense System (BMDS) Interceptors Program Element (PE) in FY 2004. Budget documentation for the FY 2002 and FY 2003 Kinetic Energy (KE) Boost program was described in PE 0603883C, Projects 4010, 4020 and 4040. The new PE, 0603886C, consolidates the next generation interceptor development efforts into one BMDS Interceptor program. The BMDS Interceptors program is described in this PE by Block Capabilities, which include Block 2008 and Block 2010.

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

The MDA develops the Ballistic Missile Defense System (BMDS) using biennial capability blocks. This approach is the most efficient and effective way to get missile defense assets into the hands of the warfighters as quickly as possible while allowing for rapid insertion of emerging technology in the most affordable manner. These capability blocks will subsequently build on and be integrated with the predecessor blocks. Block capabilities are built by using complete elements and their individual components to integrate a single BMDS and provide layered defense against ballistic missiles during all flight phases, Boost, Midcourse, and Terminal, using multiple basing modes and phenomenology.

As a part of the total BMDS, the Interceptors Program Element (PE) funds the Kinetic Energy (KE) boost/ascent capability and the Space Based Test Bed element portions of Blocks 2008 and 2010 and other Interceptor-related mission area investment activities. As a longer-term goal, the BMDS Interceptors program element will develop kinetic energy interceptors for the BMD System. This program is an essential component of the BMD System, providing kinetic energy interceptors capable of defending against ballistic missiles in the phases of boost, midcourse, and exo-atmospheric terminal phases. Additionally, the BMDS Interceptor will be designed to integrate with multiple platforms, thereby enhancing layered defenses and increasing defended areas.

Relying heavily on existing hardware and proven technology, MDA will develop the initial capability of the BMDS Interceptor by Block 2008. The program will develop capability enhancements in line with the MDA's evolutionary, spiral acquisition approach to achieve greater capability in Block 2010 and future Blocks.

Block 2008:
Using a deployable ground-based launch platform, the BMDS Interceptors program will first demonstrate initial kinetic energy capability against ballistic missiles in the boost/ascent phase. Our goal is to demonstrate this Block 2008 boost/ascent capability in the BMDS Test Bed by the end of FY 2009 or earlier. In addition, MDA will demonstrate, through testing, the Block 2008 interceptor's applicability in the midcourse phase. The Block 2008 BMDS Interceptor will evolve in subsequent Blocks with adaptability to sea-based platforms and fill capability shortfalls within the overall BMDS architecture.

In parallel with the Block 2008 Interceptor program, MDA will develop a Space Based Test Bed for incremental testing of space-based interceptor capabilities. The first satellites will be available for this testing in Block 2008 with additional functionality provided in successive Blocks.

MDA Exhibit R-2 RDT&E Budget Item Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

Block 2010:
The Block 2010 BMDS Interceptor will rely heavily on the developments of the Block 2008 capability. Through spiral development of the Block 2008 capability, the Block 2010 BMDS Interceptor will have improvements in exo-atmospheric performance and greater basing mode flexibility including adaptability to sea-based platforms.

MDA will develop and test an advanced Space Based Test Bed in support of a Block 2010 capability. It will augment and/or replace the Block 2008 Space Based Test Bed and retire most, if not all, major risks in space-based, kinetic energy ballistic missile defense.

MDA's longer-term goal is to develop low-cost enhanced BMDS multi-use interceptors that have the capability to defend against threat missiles in the boost, midcourse and exo-atmospheric terminal phases of flight. Therefore, MDA is consolidating next generation interceptor (booster plus kill vehicle (KV)) development efforts into one BMDS interceptor program. This BMDS Interceptor will counter the evolving threat through the spiral development of the Block 2008 Interceptor with enhanced KV capability. Technology advances are likely to include higher divert capability, greater seeker sensitivity, advanced discrimination capability, and lower-weight KVs.

The flow down of BMD System capability specifications resulting from Missile Defense National Team efforts in command and control, battle management, and communications (C2BMC) and Systems Engineering & Integration will guide the integration of the BMDS Interceptors into the BMD System, the BMDS C2BMC architecture, and the BMD Test Bed.

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

B. Program Change Summary	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2003 PB)	0	0	0	0
Current President's Budget (FY 2004 PB)	0	0	301052	541178
Total Adjustments	0	0	301052	541178
Congressional Specific Program Adjustments	0	0	0	0
Congressional Undistributed Adjustments	0	0	0	0
Reprogrammings	0	0	301052	541178
SBIR/STTR Transfer	0	0	0	0

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE **0603886C Ballistic Missile Defense System Interceptors**

COST ($ in Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0913 Ballistic Missile Defense Interceptors Block 2008	0	0	295542	528774	1013408	1562482	1938694	1889902
RDT&E Articles Qty	0	0	3	1	2	9	18	16

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) has created the Ballistic Missile Defense System (BMDS) Interceptors Program Element (PE) in FY 2004. Budget documentation for the FY 2002 and FY 2003 Kinetic Energy (KE) Boost program was described in PE 0603883C, Projects 4010, 4020, and 4040. The new PE, 0603886C, consolidates next generation BMDS Interceptor activities for FY 2004 and beyond into Projects 0913 and 0013.

Ground Based - Creating a boost phase layer is fundamental to the MDA goal of a robust, integrated Ballistic Missile Defense System (BMDS). By Block 2008, the MDA plans to develop and demonstrate, through flight-testing in the BMDS Test Bed, a mobile, ground-based boost phase capability that uses hit-to-kill technology. The dynamic performance of the Block 2008 interceptor may extend its initial capability into the ascent and midcourse phases; testing will occur to demonstrate the interceptor's potential application. Throughout its development, the Block 2008 capability will rely heavily on existing hardware and proven technology. In FY 2003, MDA will award up to three BMDS interceptor concept design contracts with a down-select to one capability development and test contractor in FY 2004. The contract will be structured to design, develop, and test a kinetic boost/ascent element (includes platform-launch, C2BMC, and BMDS sensor integration) and multi-use interceptor capabilities in the BMDS Test Bed. Ground will be the first-basing mode (Block 2008) with a planned evolution to sea-basing in Block 2010. We will test the multi-use interceptor in boost, ascent, and midcourse engagement phases against ICBM, IRBM, and MRBM threat classes. Successful testing in the BMDS Test Bed may lead to production opportunities.

Space Based Test Bed - MDA will begin developing a space-based kinetic energy interceptor Test Bed in FY 2004. Initial on-orbit tests will commence in Block 2008 with three to five satellites. The Test Bed capability will be expanded in two-year Blocks. Test Bed development will consist of technology development and Test Bed integration programs.

Experimentation and Test - The Near-Field InfraRed Experiment (NFIRE) spacecraft launches in summer 2004. The primary objective is to collect near-field plume and hardbody data from several targets of opportunity and dedicated targets. Resultant data will be used for the development of homing algorithms for boost phase endgame and model development and verification. The satellite payload will carry a suite of sensors that will collect data across a broad electromagnetic spectrum ranging from long-wave infrared to visible. In addition, critical data will be collected for early launch detection, sensor tracking, and characterizing the earth background. The Generation 2 kill vehicle (KV) will be integrated into the near-field experiment payload. Second generation KE Boost KVs are mature variants of existing MDA developed KV components, and will be the first KVs with the performance to reliably achieve boost phase intercept. KE Boost Test Bed development and testing will continue in FY 2004. MDA will conduct real-time fire control / C2BMC exercises and simulated engagements using space launch and ballistic missile targets of opportunity. In addition, ground-based and air-based sensors will collect boost/ascent phase data on these targets of opportunity to support the Block 2008 capability development.

B. Accomplishments/Planned Program

	FY 2002	FY 2003	FY 2004	FY 2005
Ground Based			184942	341745
RDT&E Articles (Quantity)				

FY 2002 and 2003 accomplishments/plans are described in Program Element (PE) 0603883C, Projects 4010, 4020, and 4040. For completeness, these descriptions are repeated below.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: 4. Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603886C Ballistic Missile Defense System Interceptors

FY 2002 Accomplishments:

o Completed concept definition and assessment work to define high payoff interceptor concepts and basing modes.

FY 2003 Planned Program:

o Award multiple concept design contracts for down-select to one capability developer in FY 2004.

FY 2004 Planned Program:

o Demonstrate boost/ascent phase intercept sensor, fire control, and C2BMC capabilities in BMDS Test Bed.
o Collect critical boost/ascent phenomenology data with ground, airborne, and space test assets.
o Assess BMDS interceptor concepts and designs in BMDS wargames and system tests.
o Define BMDS interceptor evolution concepts for sea-basing, air-basing, and advanced midcourse discrimination.

FY 2005 Planned Program:

o Complete ground-based boost/ascent element design reviews 1 & 2.
o Continue to demonstrate boost/ascent phase intercept sensor, fire control, and C2BMC capabilities in BMDS Test Bed.
o Conduct risk-reduction ground tests of key BMDS interceptor components (booster stages, kill vehicle sensor, divert and attitude control system).
o Continue collection of critical boost/ascent phenomenology data with ground, airborne, and space test assets.
o Assess BMDS interceptor concepts and designs in BMDS wargames and system tests.
o Define BMDS interceptor evolution concepts for sea-basing, air-basing, and advanced midcourse discrimination.

	FY 2002	FY 2003	FY 2004	FY 2005
Space Based Test Bed			14000	119464
RDT&E Articles (Quantity)				

FY 2004 Planned Program:

o Award up to three fixed price contracts in 4Q FY 2004 to potential space prime contractor/integrators.
  -- Space Test Bed Concept Definition and Design.
  -- 6-8 month period of performance.
o Begin Space Test Bed design and development for on orbit Block 2008 testing.

FY 2005 Planned Program:

o Down-select to a single Space Test Bed prime/integrator in 2-3Q FY 2005.
o Initiate technology development and testing of advanced, lightweight space-based interceptor components in 2Q FY 2005.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

-- Lightweight, high performance kill vehicle.
-- High mass fraction, space-qualified liquid and solid axial stages.
o Continue Space Test Bed design and development for on orbit Block 2008 testing.

	FY 2002	FY 2003	FY 2004	FY 2005
Experimentation & Test			81600	52877
RDT&E Articles (Quantity)			3	1

RDT&E Articles:
FY 2004 - Target, NFIRE
FY 2004 - Satellite, NFIRE
FY 2004 - Space Launch Vehicle for the NFIRE Satellite
FY 2005 - Target, NFIRE

FY 2002 and 2003 accomplishments/plans are described in Program Element (PE) 0603883C, Projects 4010, 4020 and 4040. For completeness, these descriptions are repeated below:

FY 2002 Accomplishments:

o Conducted multiple risk reduction experiments demonstrating the critical boost phase functionality.
o Targets of opportunity (TOO) testing demonstrated the feasibility of critical boost phase components, e.g., tracking capabilities and sensor integration, and provided valuable phenomenological data.

FY 2003 Planned Program:

o Commence near-field experiment development to collect near-field plume and hardbody data from several targets of opportunity and dedicated targets in order to develop homing algorithms for boost phase endgame and model development and verification.
o Integrate and test the Generation 2 kill vehicle (KV) in preparation for a FY 2004 hover test and integration into the near-field experiment payload.
o Continue KE Boost Test Bed development throughout FY 2003.
o Conduct real-time fire control/BMC2 exercises and simulated engagements using space launch and ballistic missile targets of opportunity.
o Using ground-based and air-based sensors, collect boost/ascent phase data on TOO missions to support Block 2008 capability development.

FY 2004 Planned Program:

o Execute NFIRE
-- Continue integration and test of NFIRE components: Satellite bus; Tracking payload; Generation 2 kill vehicle payloads.
-- Integrate tracking sensor and kill vehicle payloads onto spacecraft.
-- Perform environmental testing on spacecraft.
-- Execute Generation 2 kill vehicle hover test.
-- Complete launch vehicle integration.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

-- Build and launch dedicated NFIRE target for near-field plume and hardbody characterization by NFIRE satellite sensors.
-- Launch NFIRE spacecraft.
-- Begin NFIRE mission operations: Execute TOO missions; Execute Ground IR Event missions; Dedicated Target Fly-by.

o Conduct Test Bed experiments:
-- Track targets of opportunity in boost and ascent phases with Overhead Non-imaging InfraRed (ONIR) satellites and NFIRE.
-- Process real-time tracking data at Joint National Integration Center (JNIC) terrestrial and BMDS Interceptor space-based (NFIRE) C2BMC nodes.
-- Transmit tracking data among JNIC nodes and NFIRE.
-- Simulate engagements.
-- Surveil targets of opportunity with auxiliary airborne and ground-based sensors to enhance Block 2008 capability development.

FY 2005 Planned Program:

o Continue NFIRE mission operations.
-- Execute TOO missions.
-- Execute Satellite Flyby mission with target of opportunity.
-- Execute Ground IR Event missions.
-- Execute KV engagement with dedicated target.
o Continue Test Bed experiments.
o Build targets for Block 2008 developmental tests, which are scheduled to begin in FY 2006.

	FY 2002	FY 2003	FY 2004	FY 2005
Program Management & Engineering			15000	14688
RDT&E Articles (Quantity)				

This effort supports the program management and engineering for BMDS interceptors project including contractor support (SETA), continuing risk reduction activities Federally Funded Research and Development Center (FFRDC) efforts, and National Laboratory efforts.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

C. Other Program Funding Summary

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603869C Meads Concepts - Dem/Val	0	114781	0	0	0	0	0	0		
PE 0603175C Ballistic Missile Defense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE 0603879C Advanced Concepts, Evaluations and Systems	0	0	151696	216778	166308	193949	241947	234484		
PE 0603880C Ballistic Missile Defense System Segment	790535	1046652	0	0	0	0	0	0		
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	195800	136399	810440	924356	985514	805785	558071	371649		
PE 0603883C Ballistic Missile Defense Boost Defense Segment	583463	718036	626264	653612	755163	665772	477109	354346		
PE 0603884C Ballistic Missile Defense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE 0603890C Ballistic Missile Defense System Engineering and Integration	0	0	483996	522458	604445	628594	703055	706501		
PE 0603888C Ballistic Missile Defense Test and Targets	0	0	611522	711181	661416	643302	639839	672396		
PE 0603889C Ballistic Missile Defense Products	0	0	343644	384763	333636	343447	349335	360951		
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	818632	888323	0	0	0	0	0	0		
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	130630	176155	0	0	0	0	0	0		
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE 0604867C Navy Area Theater Missile Defense - EMD	96121	0	0	0	0	0	0	0		
PE 0605502C Small Business Innovative Research - MDA	145102	0	0	0	0	0	0	0		
PE 0901585C Pentagon Reservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE 0901598C Management Headquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499		

MDA Exhibit R-2A RDT&E Project Justification	Date **February 2003**
APPROPRIATION/BUDGET ACTIVITY **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE **0603886C Ballistic Missile Defense System Interceptors**

D. Acquisition Strategy

The BMDS Interceptor program will follow the MDA's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The Department has consolidated the development of BMDS interceptors under this PE to enhance commonality and avoid duplicative efforts. The BMDS Interceptor builds on the Block 2008 interceptor development, leveraging on emerging technology and capability. Our strategy is to develop a BMDS interceptor with initial ground-based capability and a Space Based Test Bed in Block 2008, and enhanced capability in subsequent blocks.

Ground Based: As described in PE 0603883C, Project 4010, MDA will award concept definition contracts in FY 2003 with a down-select to one capability development contractor in FY 2004. MDA will structure the contract to support the development of a prototype system including interceptors, launchers, platform modification and integration, and sensor integration for testing. Successful testing in the BMDS Test Bed may lead to production opportunities.

Space Based Test Bed: MDA will award concept definition and design contracts in FY 2004 to potential prime integrating contractors with a down-select to one integrating contractor in FY 2005.

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: **0603886C Ballistic Missile Defense System Interceptors**

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Ground Based												
Capability Development	C/Various	Various				184942	1Q	341745	1/4Q	CONT.	526687	CONT.
Space Based Test Bed												
Capability Development	Various	Various				14000	1/4Q	119464	1/4Q	CONT.	133464	CONT.
Subtotal Product Development			0	0		198942		461209			660151	

Remarks

II. Support Costs Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Management & Engineering												
SETA/Facilities	C/Various	Various				13000	1/4Q	13188	1/4Q	CONT.	26188	CONT.
Subtotal Support Costs			0	0		13000		13188			26188	

Remarks

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: **0603886C Ballistic Missile Defense System Interceptors**

III. Test and Evaluation Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Experimentation & Test												
Experimentation & Test	Various	Various				34000	1/4Q	52877	1/4Q	CONT.	86877	CONT.
Experimentation & Test - NFIRE	Various	SpectrumAstro, Raytheon, Other/Gilbert, AZ; Tucson, AZ, & TBD				47600	1/2Q				47600	
Subtotal Test and Evaluation			0	0		81600		52877			134477	

Remarks

IV. Management Services Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Management & Engineering												
FFRDC/National Laboratory	Various	Various/ Lawrence Livermore Natnl Lab/Livermore, CA				2000	1/4Q	1500	1/4Q	CONT.	3500	CONT.
Subtotal Management Services			0	0		2000		1500			3500	

Remarks

Project Total Cost			0	0		295542		528774			824316	

Remarks

MDA will award concept definition contracts in FY 2003 with a down-select to one capability development contractor in FY 2004. In addition, in FY 2003, the Scientific and Engineering Technical Assistance (SETA) contract expires 31 March 2003. The government is conducting a full and open competition for program system engineering, management, planning, and operations support. The contract will extend to FY 2006.

MDA Exhibit R-4 Schedule Profile

Date: **February 2003**

APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**

R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

Fiscal Year	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
BMDS Interceptors																																
a. Block 08 Multiple Contractor Award							△																									
b. Block 08 Contract Downselect									△																							
c. Near-field Infrared Experiment (NFIRE)											△																					
d. Design Review 1													△																			
e. Design Review 2																△																
f. First Flight Test (Ground Based)																				△												
g. Second Flight Test (Ground Based)																					△											
h. Third Flight Test (Ground Based)																						△										
i. Fourth Flight Test (Ground Based)																							△									
j. Fifth Flight Test (Ground Based)																								△								
k. Sixth Flight Test (Ground Based)																									△							
l. Seventh Flight Test (Ground Based)																										△						
m. Eighth Flight Test (Ground Based)																											△					
n. Ninth Flight Test (Ground Based)																												△				
o. Block 08 Capability																												△				
Space Based Testbed																																
a. Block 08 Multiple Contractor Award												△																				
b. Block 08 Contract Downselect															△																	
c. Design Review 1																			△													
d. Design Review 2																							△									
e. First Satellite Launch																												△				
f. First Flight Test																													△			
g. Additional Satellite Launches																																
h. Additional Flight Tests																																

MDA Exhibit R-4A Schedule Detail	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
BMDS Interceptors								
a. Block 08 Multiple Contractor Award		3Q						
b. Block 08 Contract Downselect			1Q					
c. Near-field Infrared Experiment (NFIRE)			3Q					
d. Design Review 1				1Q				
e. Design Review 2				4Q				
f. First Flight Test (Ground Based)					4Q			
g. Second Flight Test (Ground Based)						1Q		
h. Third Flight Test (Ground Based)						2Q		
i. Fourth Flight Test (Ground Based)						3Q		
j. Fifth Flight Test (Ground Based)						4Q		
k. Sixth Flight Test (Ground Based)							1Q	
l. Seventh Flight Test (Ground Based)							2Q	
m. Eighth Flight Test (Ground Based)							3Q	
n. Ninth Flight Test (Ground Based)							4Q	
o. Block 08 Capability							4Q	
Space Based Test Bed								
a. Block 08 Multiple Contractor Award			4Q					
b. Block 08 Contract Downselect				3Q				
c. Design Review 1					3Q			
d. Design Review 2						3Q		
e. First Satellite Launch							4Q	
f. First Flight Test								1Q
g. Additional Satellite Launches								1Q-4Q
h. Additional Flight Tests								1Q-4Q

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

COST ($ in Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0013 Ballistic Missile Defense Interceptors Block 2010	0	0	0	0	97335	146391	585119	974176
RDT&E Articles Qty	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

Ground and Sea Based - The Block 2010 BMDS Interceptor will rely heavily on the developments of the Block 2008 capability. Through spiral development of the Block 2008 capability, the Block 2010 BMDS Interceptor will have improvements in exo-atmospheric performance and greater basing mode flexibility including adaptability to sea based platforms. Potential performance advances in this capability are guidance algorithms, seeker hardware and associated signal processing/discrimination software. The increased basing flexibility and performance will allow intercepts of ballistic missiles in all phases of flight and increase defended area.

Space Based - MDA will develop and test an advanced Space Based Test Bed in support of a Block 2010 capability. It will augment and/or replace the Block 2008 Space Based Test Bed and retire most, if not all, major risks in space based, kinetic energy ballistic missile defense. Building on the Block 2008 Space Based Test Bed, the Block 2010 Space Based Test Bed will develop an additional three to five satellites with advanced, lightweight lifejackets and interceptors. A technology development effort focused on the miniaturization of space based components will support the Block 2010 Test Bed testing by developing advanced, high performance kill vehicles and axial propulsion. We will also address key issues such as lifejacket/interceptor miniaturization, inter-satellite communications, interceptor guidance, and constellation management and control during this phase.

B. Accomplishments/Planned Program

	FY 2002	FY 2003	FY 2004	FY 2005
BMDS Interceptor Block 2010				
RDT&E Articles (Quantity)				

Funding in this project is not programmed until FY 2006.

C. Other Program Funding Summary

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603175C Ballistic Missile Defense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	818632	888323	0	0	0	0	0	0		
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	130630	176155	0	0	0	0	0	0		
PE 0604867C Navy Area Theater Missile Defense - EMD	96121	0	0	0	0	0	0	0		

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: 4. Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603886C Ballistic Missile Defense System Interceptors

PE 0605502C Small Business Innovative Research - MDA	145102	0	0	0	0	0	0	0		
PE 0901585C Pentagon Reservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE 0901598C Management Headquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499		
PE 0603889C Ballistic Missile Defense Products	0	0	343644	384763	333636	343447	349335	360951		
PE 0603879C Advanced Concepts, Evaluations and Systems	0	0	151696	216778	166308	193949	241947	234484		
PE 0603880C Ballistic Missile Defense System Segment	790535	1046652	0	0	0	0	0	0		
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	195800	136399	810440	924356	985514	805785	558071	371649		
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE 0603883C Ballistic Missile Defense Boost Defense Segment	583463	718036	626264	653612	755163	665772	477109	354346		
PE 0603884C Ballistic Missile Defense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE 0603890C Ballistic Missile Defense System Engineering and Integration	0	0	483996	522458	604445	628594	703055	706501		
PE 0603888C Ballistic Missile Defense Test and Targets	0	0	611522	711181	661416	643302	639839	672396		
PE 0603869C Meads Concepts - Dem/Val	0	114781	0	0	0	0	0	0		

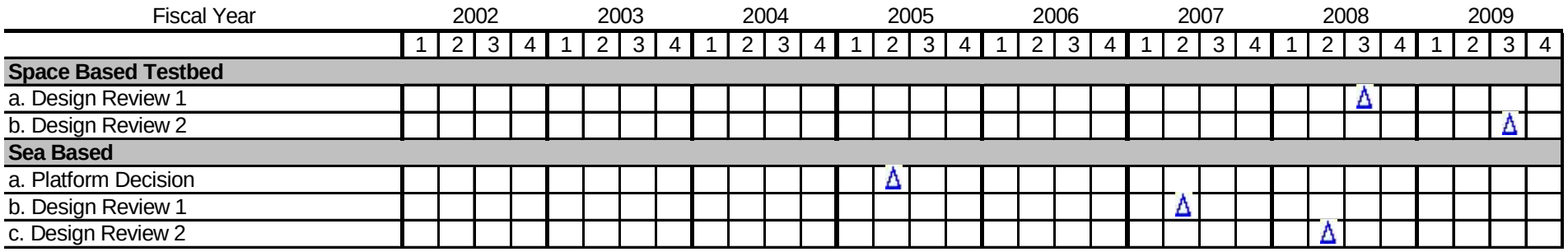
D. Acquisition Strategy

The BMDS Interceptor program will follow the MDA's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks.

Ground and Sea Based - The Block 2008 prime contractor will be responsible for developing Block 2010 capability. The prime contractor will modify the Block 2008 element to incorporate the increased performance and sea basing capability and produce the Block 2010 capability.

Space Based - The Block 2008 Test Bed integrator will be responsible for developing Block 2010 Space Based Test Bed. The prime contractor will integrate advanced interceptor and lifejacket technologies into the existing Block 2008 Test Bed.

MDA Exhibit R-4 Schedule Profile	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**



MDA Exhibit R-4A Schedule Detail	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Space Based Test Bed								
a. Design Review 1							3Q	
b. Design Review 2								3Q
Sea Based								
a. Platform Decision				2Q				
b. Design Review 1						2Q		
c. Design Review 2							2Q	

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

COST ($ in Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0602 Program Operations	0	0	5510	12404	16437	20740	34514	40018
RDT&E Articles Qty	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

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

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

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

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

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

B. Accomplishments/Planned Program

	FY 2002	FY 2003	FY 2004	FY 2005
Personnel	0	0	83	348
RDT&E Articles (Quantity)				

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

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: 4. Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603886C Ballistic Missile Defense System Interceptors

	FY 2002	FY 2003	FY 2004	FY 2005
Management Support	0	0	3860	8277
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.

	FY 2002	FY 2003	FY 2004	FY 2005
Fiscal Requirements	0	0	1567	3779
RDT&E Articles (Quantity)				

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

C. Other Program Funding Summary

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603869C Meads Concepts - Dem/Val	0	114781	0	0	0	0	0	0		
PE 0603879C Advanced Concepts, Evaluations and Systems	0	0	151696	216778	166308	193949	241947	234484		
PE 0603880C Ballistic Missile Defense System Segment	790535	1046652	0	0	0	0	0	0		
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	195800	136399	810440	924356	985514	805785	558071	371649		
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3655089	3103844	3613266	3841412	2078522	1908511	1482389	1437923		
PE 0603883C Ballistic Missile Defense Boost Defense Segment	583463	718036	626264	653612	755163	665772	477109	354346		
PE 0603884C Ballistic Missile Defense Sensors	312973	350436	438242	562752	706514	1043454	1152740	1261906		
PE 0603890C Ballistic Missile Defense System Engineering and Integration	0	0	483996	522458	604445	628594	703055	706501		

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2003
APPROPRIATION/BUDGET ACTIVITY: **4. Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603886C Ballistic Missile Defense System Interceptors**

PE 0603175C Ballistic Missile Defense Technology	145021	151130	240820	205791	200956	247990	287864	306472		
PE 0603888C Ballistic Missile Defense Test and Targets	0	0	611522	711181	661416	643302	639839	672396		
PE 0603889C Ballistic Missile Defense Products	0	0	343644	384763	333636	343447	349335	360951		
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	818632	888323	0	0	0	0	0	0		
PE 0604867C Navy Area Theater Missile Defense - EMD	96121	0	0	0	0	0	0	0		
PE 0605502C Small Business Innovative Research - MDA	145102	0	0	0	0	0	0	0		
PE 0901585C Pentagon Reservation	6381	7432	14481	13384	12758	12850	13158	13476		
PE 0901598C Management Headquarters - MDA	30191	25365	93441	101373	114107	121743	128972	133499		
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	130630	176155	0	0	0	0	0	0		