MDA Exhibit R-2 RDT&E Budget Item Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324
0707 Theater High Altitude Area Defense (THAAD) Block 2004	0	686,925	592,838	154,167	0	0	0
0807 Theater High Altitude Area Defense (THAAD) Block 2006	0	29,385	239,147	534,581	790,527	91,314	0
0907 Theater High Altitude Area Defense (THAAD) Block 2008	0	0	1,810	204,329	231,731	388,503	323,663
2016 Israeli Arrow Program	124,594	0	0	0	0	0	0
0401 Israeli Arrow Program	0	143,151	87,290	79,001	78,954	79,001	79,062
2090 Program-Wide Support	9,499	0	0	0	0	0	0
0602 Program-Wide Support	0	15,066	16,663	20,970	16,445	11,182	7,599

Note: THAAD is included in Program Element (PE) 0604861C for FY 2003 and transitions to this Terminal Defense Segment (TDS) PE 0603881C for FY 2004 and out.

A. Mission Description and Budget Item Justification

Our goal is to defend the United States and our allies, friends, and deployed forces from ballistic missiles of all ranges in all phases of flight. By the beginning of FY 2005, we will put the BMDS on alert and, for the first time, we will have a capability to defeat a ballistic missile threatening the United States. In FY 2005 and the remainder of the FYDP, we will increase the breadth and depth of our defense by adding forward-deployed, networked sensors, by adding interceptors at sea and on land, and by adding layers of increasingly capable weapons and sensors. Throughout this documentation, therefore, every activity can be tied to one of our four objectives: complete, verify and test the Initial Defensive Capability; put the Ballistic Missile Defense System on alert; develop procedures and logistics to perform and sustain concurrent testing and operations; and enhance the BMDS 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 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 an integral part of the total BMDS, the Terminal Defense Segment (TDS) Program Element (PE) funds the Terminal-related element portions of Blocks 2004, 2006, and 2008 and other Terminal-related mission area investment activities. The TDS elements and activities include Theater High Altitude Area Defense (THAAD) and the Israeli Arrow Program. The Patriot Advanced Capability (PAC) 3 element is also a part of the Terminal Defense mission, however, it is funded by the U.S. Army beginning in FY 2004. The BMDS elements in Terminal Defense pursue development and selective upgrades of missile defense capabilities that engage short to medium-range ballistic missiles in the late mid course and terminal phase of their trajectory.

The Terminal Defense Elements provide the final opportunity to engage short to medium-range ballistic missiles not engaged or destroyed in the boost or mid-courses of trajectory. Upon direction of the Ballistic Missile Defense System (BMDS) Command and Control/Battle Management Communications (C2BMC), the THAAD, AEGIS BMD, and fielded Patriot Systems provide the only capability to defend deployed U.S. forces from short to medium-range ballistic missiles, and protect broadly dispersed assets and population centers or selected U.S. sites (Homeland Defense) from short to medium-range ballistic missile attacks. The THAAD element enhances the Missile Defense Agency's Terminal Defense System by deepening, complementing, and extending the BMDS battlespace and capability to engage and negate ballistic missiles and asymmetric threats in both the late mid-course (exo-atmospheric engagements) and terminal phase (endo-atmospheric engagements) of their trajectory and adds significant capability to the BMDS as the threat missiles transition from the mid-course to terminal phase. The THAAD element contributes to the BMDS by providing uncued, cued, and launch on remote engagement sequence capability. Integrated with the AEGIS BMD and PATRIOT Systems, the rapidly deployable THAAD element improves the BMDS overall effectiveness by engaging missiles as they transition from exo- to endo- atmospheric flight where the reentry vehicles are more vulnerable. The flow down of BMD System capability

specifications resulting from the Missile Defense National Team efforts in Command & Control/Battle Management Communications (C2BMC) and Systems Engineering & Integration will guide the integration of the TDS into the BMD System and the BMDS C2BMC architecture.

Consistent with the MDA block management framework, the THAAD system element consists of Blocks 2004, 2006, and 2008:

Block 2004: Block 2004 represents the design and development of a significant, fundamental THAAD capability against short to medium-range Ballistic Missiles (BMs) and asymmetric threats and demonstration of exo and high endo intercept capability against a limited target set. The rapidly deployable Block 2004 THAAD element will have the following block objectives: - Test Missile with Exo and High Endo Algorithms; -Radar with Initial Discrimination Capability; and - C2BMC with Limited TADIL-J and Defense Design Planner. Block 2004 develops THAAD uncued, cued (from any TADIL-J, Link 16 source) engagement sequence group capability. THAAD Block 2004 also provides the cueing capability for PATRIOT cued and AEGIS cued engagement sequence along with providing AEGIS the capability to conduct launch on remote engagement sequences. Flight testing for Block 2004 begins in 1st quarter, FY 2005, and continues through 1st quarter, FY 2006 with a total of 5 flight tests.

Block 2006: Block 2006 represents the second incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. This block builds on the core, near-term ballistic missile and asymmetric threat defense capability provided to the BMDS by THAAD Block 2004. Additionally, THAAD Block 2006 will initiate fielding to support the BMDS infrastructure. This block continues the concept of being rapidly deployable and expands the capabilities of the THAAD system to address improved Exo and Endo capability against increasingly complex targets. The Block 2006 THAAD element will have robust radar discrimination, capability in stressing Exo and Endo battlespace, Salvo firing doctrine, and operate in a full spectrum of tactical missile environments and survivability. Block 2006 also includes C2BMC embedded training, automated defense planning, and extensive interoperability. Block 2006 THAAD adds to capability for AEGIS to conduct remote engagement sequences to the Block 2004 baseline engagement sequence groups. Block 2006 flight testing begins in 3rd quarter, FY 2006 and continues through 1st quarter, FY 2008 with a total of 5 flight tests.

Block 2008: Block 2008 represents the third incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. This block continues the concept of being rapidly deployable and builds on the core, ballistic missile and asymmetric threat defense capability provided to the BMDS by THAAD Block 2006. This block demonstrates the capabilities of the THAAD system in endo- and exo- atmospheric battlespace against the full threat set. Block 2008 flight testing begins in 2nd quarter, FY 2008 and ends in 2nd quarter, FY 2009 with a total of 6 flight tests.

The Arrow system (developed jointly by the U.S. and Israel) is another one of the TDS' mission area investments and provides Israel an indigenous capability to defend against short and medium range ballistic missiles and helps ensure U.S. freedom of action in future contingencies. Arrow also provides protection against ballistic missile attacks to U.S. forces deployed to the region. The Arrow program consists of the following major efforts:

The Arrow Deployability Program (ADP), funding completed in FY02, continues the acquisition of an Israel's third Arrow battery. The Arrow System Improvement Program (ASIP) is a block upgrade of the Arrow Weapon System to enhance its capabilities against evolving regional threats. ASIP also includes the development of Arrow co-manufacturing capability and the enhancement of Arrow's interoperability with U.S. ballistic missile defense systems (BMDS) via a Joint Tactical Information Data System (JTIDS)/Link-16 common communication architecture. The Arrow System Improvement Program (ASIP) will develop upgrades to the existing Arrow Weapon System to allow Arrow to address more stressing ballistic missile threats. Related Arrow activities include Caravan Flight test Campaign in U.S., the Israeli Test Bed (ITB), and studies via the Israeli Systems Architecture and Integration (ISA&I) effort that assess the Arrow performance relative to both existing and emerging threats.

Program-Wide Support under this project covers personnel and related support costs, statutory and fiscal requirements. This includes 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.

MDA Exhibit R-2 RDT&E Budget Item Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

B. Program Change Summary	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004 PB)	136,399	810,440	924,356
Current President's Budget (FY 2005 PB)	134,093	874,527	937,748
Total Adjustments	-2,306	64,087	13,392
Congressional Specific Program Adjustments	0	74,000	0
Congressional Undistributed Adjustments	0	-9,913	0
Reprogrammings	497	0	13,392
SBIR/STTR Transfer	-2,803	0	0

THAAD is included in the Theater High-Altitude Area Defense System Program Element (PE) 0604861C for FY 2002 and FY 2003 and is transferred to this PE, BMD Terminal Defense Segment Program Element (PE) 0603881C, for FY 2004 and out.

Arrow FY04 Appropriation $80 million increase.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0707 Theater High Altitude Area Defense (THAAD) Block 2004	0	686,925	592,838	154,167	0	0	0
RDT&E Articles Qty	0	11	12	7	0	0	0

Note: FY 2002 and FY 2003 funding for this activity was in PE 0604861C.

A. Mission Description and Budget Item Justification

The Theater High Altitude Area Defense (THAAD) is an element of the Terminal Defense Segment (TDS) of the Ballistic Missile Defense System (BMDS). The Terminal Defense Elements provide the final opportunity to engage short to medium-range ballistic missiles not engaged or destroyed in the boost or mid-course phase of trajectory. The THAAD element contributes to the BMDS by providing uncued, cued, and launch on remote engagement sequence capability. THAAD enhances the Missile Defense Agency's Terminal Defense Segment by deepening, complementing, and extending the BMDS battlespace and capability to engage and negate ballistic missiles and asymmetric threats in both the later mid-course and terminal phases of their trajectory. THAAD's highly mobile capability provides BMDS the ability to defend against short to medium-range ballistic missiles and asymmetric threats for protection of U.S. and allied armed forces, broadly dispersed assets and population centers and selected U.S. sites (Homeland Defense) against ballistic missile attacks. THAAD, in conjunction with the fielded Patriot System, provides the Terminal Defense System layer. As part of its ongoing contract efforts, the Block 04 THAAD program supports the MDA objective of enhancing the BMDS capability.

Five major components (missiles, launchers, radar(s), Command and Control / Battle Management (C2BM), and THAAD-specific support equipment) will be integrated into the THAAD element and BMDS. THAAD will follow the Missile Defense Agency's (MDA) capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks, using both THAAD System and components to address National Team gap analysis of Engagement Support Groups, identifying and documenting both system and component capabilities and planning for the integration and implementation of both THAAD System and component capabilities.

Block 2004: Block 2004 represents the design and development of a significant, fundamental THAAD capability against short to medium-range Ballistic Missiles (BMs) and asymmetric threats and demonstration of exo and high endo intercept capability against a limited target set. The rapidly deployable Block 2004 THAAD element will have the following block objectives: - Test Missile with Exo and High Endo Algorithms; - Radar with Initial Discrimination Capability; - C2/BM with Limited TADIL-J and Defense Design Planner. Block 2004 develops THAAD uncued, cued (from any TADIL-J, Link 16 source) engagement sequence group capability. THAAD Block 2004 also provides the cueing capability for PATRIOT cued and AEGIS cued engagement sequence along with providing AEGIS the capability to conduct launch on remote engagement sequences. Flight testing for Block 2004 begins in 1st quarter, FY 2005, and continues through 1st quarter, FY 2006 with a total of 5 flight tests.

RDT&E Articles for Development Tests (DT):

- FY 2004 (Delivery Schedule): 1 Full-up Missile; 3 Engineering Development Unit (EDU) Missiles; 4 Ground Test Units (GTU) Missiles; 2 Launchers w/ Missile Round Pallet (MRP) and 1 additional MRP for a total of 11 RDT&E articles.
- FY 2004 (Buy Schedule): 4 Full-up Missiles; 1 EDU; 3 MRPs; 3 C2BM Tactical Station Group (TSG) for a total of 11 RDT&E articles.

- FY 2005 (Delivery Schedule): 3 Full-up Missiles; 3 Launchers w/MRP; 3 additional MRPs; 2 C2BM TSGs and 1 Radar for a total of 12 RDT&E articles.
- FY 2005 (Buy Schedule): 2 Full-up Missiles; 1 GTU; 1 TSG and 1 additional MRPs for a total of 5 RDT&E articles.

- FY 2006 (Delivery Schedule): 4 Full-up Missiles; 1 EDU; 1 GTU; 1 C2BM TSG for a total of 7 RDT&E articles.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
THAAD Block 2004 ACD&P (Missile)		277,730	129,253
RDT&E Articles (Quantity)		8	3

FY 2003 Accomplishments are shown in PE 0604861C.

FY 2004 Planned Program:

RDT&E Articles for Developmental Test (DT):

- FY 2004 (Delivery Schedule): 1 Full-up Missile; 3 Engineering Development Unit (EDU) Missiles; and 4 Ground Test Units (GTU) Missiles for a total of 8 RDT&E articles.
- FY 2004 (Buy Schedule): 4 Full-up Missiles and 1 EDU Missiles for a total of 5 RDT&E articles.

- Support completion of Block 2004 Element Design Readiness Review.
- Complete Missile hardware and software development for first flight and initiate fabrication, assembly and test of hardware for future flight tests.
- Initiate System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) activities for Missile.
- Deliver Missile software (Build 4.0 for Flight Test 1 and Build 5.0 for Flight Test 2).

FY 2005 Planned Program:

RDT&E Articles for Development Test:

- FY 2005 (Delivery Schedule): 3 Full-up Missiles.
- FY 2005 (Buy Schedule): 2 Full-up Missiles; 1 GTU for a total of 3 RDT&E articles.

- Support first two missile tests (Flight Test 1 and Flight Test 2) at White Sands Missile Range (WSMR).
- Continue System Integration Laboratory Hardware-In-Loop activities for Missile.
- Continue fabrication, assembly and test of hardware for future flight tests.
- Deliver Missile software for Seeker Characterization Flight at WSMR (Build 6.0 for Flight Test 3).
- Support first intercept of a Hera target with autonomous THAAD system at WSMR (Flight Test 4).

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

	FY 2003	FY 2004	FY 2005
THAAD Block 2004 ACD&P (Radar)		148,657	244,196
RDT&E Articles (Quantity)			1

FY 2003 Accomplishments are shown in PE 0604861C.

FY 2004 Planned Program:

- Support completion of Block 2004 Element Design Readiness Review.
- Continue Radar hardware and software development for first intercept.
- Initiate System Integration Laboratory (SIL) Hardware-In-Loop activities for Radar.

FY 2005 Planned Program:

RDT&E Articles for Developmental Test (DT):

- FY 2005 (Delivery Schedule): One Radar

- Continue System Integration Laboratory Hardware-In-Loop activities for Radar.
- Complete Radar antenna #1.
- Deliver Radar software for Seeker Characterization Flight at White Sands Missile Range (WSMR) (Build 4.1 for Flight Test 3)
- Support first intercept of a Hera target with autonomous THAAD system at WSMR (Flight Test 4).

	FY 2003	FY 2004	FY 2005
THAAD Block 2004 ACD&P (Launcher)		17,496	7,478
RDT&E Articles (Quantity)		3	6

FY 2003 Accomplishments are shown in PE 0604861C.

FY 2004 Planned Program:

RDT&E Articles for Developmental Test (DT):

- FY 2004 (Delivery Schedule): Two Launchers w/MRP and 1 additional Missile Round Pallets for a total of 3 RDT&E articles.
- FY 2004 (Buy Schedule): 3 Launchers; 3 additional Missile Round Pallets for a total of 6 RDT&E articles.

- Support completion of Block 2004 Element Design Readiness Review.
- Continue software development for Flight Test 3.
- Initiate fabrication, assembly, and test of Launcher hardware.
- Initiate System Integration Laboratory (SIL) Hardware-In-Loop activities for Launcher.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

FY 2005 Planned Program:

RDT&E Articles for Developmental Test (DT):

- FY 2005 (Delivery Schedule): 3 Launchers w/MRP and 3 additional Missile Round Pallets for a total of 6 RDT&E articles.
- FY 2005 (Buy Schedule): 1 additional Missile Round Pallets.

- Support first two missile tests at White Sands Missile Range (WSMR).
- Continue System Integration Laboratory Hardware-In-Loop activities for Launcher.
- Deliver Launcher software for Seeker Characterization Flight at WSMR (Build 3.0 for Flight Test 3)
- Support first intercept of a Hera target with autonomous THAAD system at WSMR (Flight Test 4).

	FY 2003	FY 2004	FY 2005
THAAD Block 2004 ACD&P (C2BMC)		50,438	33,963
RDT&E Articles (Quantity)			2

FY 2003 Accomplishments are shown in PE 0604861C.

FY 2004 Planned Program:

RDT&E Articles for Developmental Test (DT):

- FY 2004 (Buy Schedule): 3 C2BMC Tactical Station Groups (TSG)

- Support completion of Element Design Readiness Review.
- Initiate fabrication, assembly, and test of C2BM hardware.
- Continue software development.
- Initiate System Integration Laboratory (SIL) Hardware-In-Loop activities for C2BM.

FY 2005 Planned Program:

RDT&E Articles for Developmental Test (DT):

- FY 2005 (Delivery Schedule): 2 C2BM Tactical Station Groups

- Formal release of C2BM Build 4.0 software for System Integration Laboratory (SIL) Testing at White Sands Missile Range (WSMR).
- Continue SIL Hardware-In-The-Loop (HWIL) activities for C2BM.
- Support first integrated flight test (Flight Test 3) at White Sands Missile Range (WSMR), as well as Flight Test 4 and Flight Test 5.
- Continue fabrication, assembly, integration, and test of C2BMC TSGs.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

	FY 2003	FY 2004	FY 2005
THAAD Block 2004 ACD&P (Integrated Logistics Support)		16,774	11,638
RDT&E Articles (Quantity)			

FY 2003 Accomplishments are shown in PE 0604861C.

FY 2004 Planned Program:

- Procure GFE to support total program requirements.
- Maintain an Integrated Logistics Support program.
- Conduct supportability analysis.
- Develop support strategy, support documentation, and training material.
- Develop and procure training devices and Peculiar Support Equipment.
- Conduct training to support soldier participation in the Block 2004 Flight Test program.

FY 2005 Planned Program:

- Procure GFE to support total program requirements.
- Maintain an Integrated Logistics Support program.
- Conduct supportability analysis.
- Develop support strategy, support documentation, and training material.
- Develop and procure training devices and Peculiar Support Equipment.
- Conduct training to support soldier participation in the Block 2004 Flight Test program.

	FY 2003	FY 2004	FY 2005
THAAD Block 2004 ACD&P (Sys Level Prog Mgmt)		77,995	63,225
RDT&E Articles (Quantity)			

FY 2003 Accomplishments are shown in PE 0604861C.

FY 2004 Planned Program:

- Oversee and participate in Block 2004 Element Design Readiness Review.
- Provide leadership and direction to program.
- Ensure program integration with BMDS National Team.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

FY 2005 Planned Program:

- Support Controlled Flight Test 1 and Flight Test 2, seeker characterization flight, and first HERA intercept at WSMR.
- Continue to provide guidance and management to program.
- Continue program integration with BMDS.

	FY 2003	FY 2004	FY 2005
THAAD Block 2004 ACD&P (Weapon Sys Engr & Integ Team)		58,933	28,884
RDT&E Articles (Quantity)			

FY 2003 Accomplishments are shown in PE 0604861C.

FY 2004 Planned Program:

- Conduct Block 2004 Element Critical Design Review.
- Assess Block 2004 capabilities using comprehensive, end-to-end digital simulation.
- Support Flight Test mission planning.
- Complete development/integration of the system integration Hardware-in-the-Loop facility.
- Begin integration of Components in the system integration Hardware-in-the-Loop facility.
- Participate in wargames, exercises and interoperability demonstrations.

FY 2005 Planned Program:

- Support Controlled Flight Test 1, Flight Test 2, seeker characterization flight, and first Hera intercept at White Sands Missile Range (WSMR).
- Begin validation of the end-to-end digital simulation using Flight Test data.
- Complete integration of an autonomous THAAD system in the system integration Hardware-in-the-Loop facility.
- Support pre-flight testing in the system integration Hardware-in-the-Loop facility.
- Support Flight Test data analysis.
- Continue validation of the end-to-end digital simulation using Flight Test data.
- Begin validation of the system integration Hardware-in-the-Loop facility using Flight Test data.
- Begin integration of Flight Test 5 flight hardware and software in the system integration Hardware-in-the-Loop facility.
- Participate in wargames, exercises and interoperability demonstrations.
- Update assessment of Block 2004 Element capability using comprehensive, end-to-end digital simulation.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

	FY 2003	FY 2004	FY 2005
THAAD Block 2004 ACD&P (Ground and Flight Test Support)		30,207	25,787
RDT&E Articles (Quantity)			

FY 2003 Accomplishments are shown in PE 0604861C.

FY 2004 Planned Program:

- Flight Test Planning - Continue integration into White Sands Missile Range (WSMR) and Pacific Missile Range Facility (PMRF).
- Test Range Facilities Activation
- System Integration Laboratory (SIL) Element Verification Testing.
- Launch & Test Support Equipment (L&TSE) validation and range integration.
- Support early Developmental Flight tests at White Sands Missile Range (WSMR).
- Component delivery and integration; Target integration planning.
- Ground Test Planning - Continue planning for Block Qualification Testing (BQT).
- Provide hardware for Safety tests; transition planning.
- Lethality - Planning for sled test program and Scaled Light Gas Gun (LGG) Test planning.

FY 2005 Planned Program:

- Flight Test Planning - Continue integration into PMRF.
- Transition planning/execution from WSMR to PMRF.
- Support four flight tests at WSMR.
- Ground Test Planning - Continue planning for Block Qualification Testing (BQT) and transition planning.
- Lethality (Capability Development/Development Tests) - Conduct sled tests and continue planning for light gas gun test.

	FY 2003	FY 2004	FY 2005
Block 2004 Government Test & Evaluation		8,695	48,414
RDT&E Articles (Quantity)			

FY 2003 Accomplishments are shown in PE 0604861C.

FY 2004 Planned Program:

- Flight Test Planning - Continue integration into White Sands Missile Range (WSMR) and Pacific Missile Range Facility (PMRF).
- Ground Test Planning - Continue planning for Block Qualification Test (BQT).
- Lethality - Planning for sled test program at Holloman Air Force Base.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

FY 2005 Planned Program:

- Support all four tests at WSMR.
- Flight Test Planning - Continue integration into Pacific Missile Range Facility.
- Ground Test Planning - Continue planning for Block Qualification Testing (BQT).
- Lethality - Conduct sled tests and check out tests and continue planning for light gas gun test.

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing

D. Acquisition Strategy

THAAD 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. The THAAD Block 2004 program is already on contract with Lockheed Martin Space Systems Company (LMSSC), Sunnyvale, CA. The 103-month Cost Plus Award Fee contract was awarded effective August 4, 2000, and is 50% complete. Current development activities supporting THAAD Block 2004 can be used to provide an initial capability to protect deployed U. S. and allied forces, or selected U.S. sites.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
THAAD Block 2004 ACD&P (Missile)										
	SS/CPAF	LMSSC/ Various		277,730	1/3Q	129,253	1/2Q		406,983	
THAAD Block 2004 ACD&P (Radar)										
	SS/CPAF	LMSSC and Raytheon/ Various		148,657	1/3Q	244,196	1/2Q		392,853	CONT.
THAAD Block 2004 ACD&P (Launcher)										
	SS/CPAF	LMSSC/ Various		17,496	1/3Q	7,478	1/2Q		24,974	CONT.
THAAD Block 2004 ACD&P (C2BMC)										
	SS/CPAF	LMSSC and Raytheon/ Various		50,438	1/3Q	33,963	1/2Q		84,401	CONT.
THAAD Block 2004 ACD&P (Integrated Logistics Support)										
	SS/CPAF	LMSSC/ Various		16,774	1/3Q	11,638	1/2Q		28,412	CONT.
THAAD Block 2004 ACD&P (Sys Level Prog Mgmt)										
	SS/CPAF	LMSSC/ Various		77,995	1/3Q	63,225	1/2Q		141,220	CONT.
THAAD Block 2004 ACD&P (Weapon Sys Engr & Integ Team)										
	SS/CPAF	LMSSC/ Various		58,933	1/3Q	28,884	1/2Q		87,817	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
THAAD Block 2004 ACD&P (Ground and Flight Test Support)										
	SS/CPAF	LMSSC/ Various		30,207	1/3Q	25,787	1/2Q		55,994	
Subtotal Product Development			0	678,230		544,424		0	1222654	

Remarks
Lockheed contract DASG60-00-C-0072 was awarded 4 Aug 00. Prior year funds are in Project 2011.

II. Support Costs Cost ($ in Thousands)

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

Remarks

III. Test and Evaluation Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Block 2004 Government Test & Evaluation										
TEST PLANNING	MIPR	WSMR/ AMCOM		8,695	1/2Q	48,414	1/2Q		57,109	CONT.
Subtotal Test and Evaluation			0	8,695		48,414		0	57109	

Remarks

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

IV. Management Services Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Management Services			0	0		0		0	0	
Remarks										
Project Total Cost			0	686,925		592,838			1,279,763	
Remarks										

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Testing Milestones																												
Conduct Block 2004 Flight Test 1									Δ																			
Conduct Block 2004 Flight Test 2										Δ																		
Conduct Block 2004 Flight Test 3											Δ																	
Conduct Block 2004 Flight Test 4												Δ																
Conduct Block 2004 Flight Test 5													Δ															
BLOCK 2004																												
Element Design Readiness Review (DRR)						Δ																						
Flt 1 Missile Delivered to WSMR								Δ																				
Flt 1 Missile S/W Final Release Integrated at SIL							Δ																					
Flt 3 Missile S/W Final Release Integrated at SIL									Δ																			
Flt 3 Missile Delivered to WSMR											Δ																	
C2BMC Tactical Station Grp (TSG) Integ at SIL									Δ																			
C2BMC S/W B4 Final Release Integrated at SIL										Δ																		
Launcher #2 (Prototype) Integrated at WSMR					Δ																							
Launcher S/W B3 Final Release Integrated at SIL									Δ																			

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BLOCK 2004																												
Launcher #3 Integrated at WSMR									Δ																			
Radar #1 Integration and Test Complete										Δ																		
Radar S/W B4.1 Final Release Integrated at SIL										Δ																		
Soldier-in-the-Loop Training Course 1 Complete								Δ																				
Soldier-in-the-Loop Training Course 2 Complete												Δ																
Active Leak Sensor Prototype Delivered to Troy, AL								Δ																				
Flt 1 SIL Final Integration							Δ																					
Flt 2 SIL Final Integration								Δ																				
Flt 3 SIL Final Integration										Δ																		
Flt 4 SIL Final Integration											Δ																	
Block Process Validation (BPV) Complete											Δ																	

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones							
Conduct Block 2004 Flight Test 1			1Q				
Conduct Block 2004 Flight Test 2			2Q				
Conduct Block 2004 Flight Test 3			3Q				
Conduct Block 2004 Flight Test 4			4Q				
Conduct Block 2004 Flight Test 5				1Q			
BLOCK 2004							
Element Design Readiness Review (DRR)		2Q					
LNTSE #1 Integrated at SIL		2Q					
WSMR Activation Complete		2Q					
Kill Vehicle (KV) Qual Tests Complete		4Q					
Range Safety Qual Test Complete		3Q					
Missile Environments Phase I Complete		4Q					
Flt 1 Missile Delivered to WSMR		4Q					
Flt 1 Missile S/W Engr Release Integrated at SIL		2Q					
Flt 1 Missile S/W Final Release Integrated at SIL		3Q					
Flt 3 Missile S/W Engr Release Integrated at SIL			1Q				
Flt 3 Missile S/W Final Release Integrated at SIL			1Q				
Flt 3 Missile Delivered to WSMR			3Q				
C2BMC S/W B4 Formal Qual Test Complete		4Q					
C2BMC Tactical Station Grp (TSG) Integ at SIL			1Q				
C2BMC TSG Available BQT				2Q			
C2BMC S/W B4 Engr Release Integrated at SIL		4Q					
C2BMC Block Process Validation (BPV) Complete		4Q					
C2BMC S/W B4 Final Release Integrated at SIL			2Q				
Launcher #2 (Prototype) Integrated at WSMR		1Q					
Launcher S/W B3 Eng Release Integrated at SIL		4Q					
Launcher S/W B3 Final Release Integrated at SIL			1Q				
Launcher Block Process Validation (BPV) Complete			1Q				
Launcher #3 Integrated at WSMR			1Q				
Radar #1 Integration and Test Complete			2Q				

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Radar S/W B4.1 Engr Release Integrated at SIL		4Q					
Radar Block Process Validation (BPV) Complete		2Q					
Radar S/W B4.1 Final Release Integrated at SIL			2Q				
Soldier-in-the-Loop Training Course 1 Complete		4Q					
Soldier-in-the-Loop Training Course 2 Complete			4Q				
Active Leak Sensor Prototype Delivered to Troy, AL		4Q					
Flt 1 SIL Final Integration		3Q					
Flt 2 SIL Final Integration		4Q					
Flt 3 SIL Final Integration			2Q				
Flt 4 SIL Final Integration			3Q				
Block Process Validation (BPV) Complete			3Q				

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0807 Theater High Altitude Area Defense (THAAD) Block 2006	0	29,385	239,147	534,581	790,527	91,314	0
RDT&E Articles Qty	0	0	0	4	14	1	2

A. Mission Description and Budget Item Justification

The Theater High Altitude Area Defense (THAAD) is an element of the Terminal Defense Segment (TDS) of the Ballistic Missile Defense System (BMDS). The Terminal Defense Elements provide the final opportunity to engage all ranges of ballistic missiles not engaged or destroyed in the boost or mid-course phase of trajectory. The THAAD element contributes to the BMDS by providing uncued, cued, and launch on remote engagement sequence capability. Integrated with the AEGIS BMD and PATRIOT Systems, the rapidly deployable THAAD element improves the BMDS overall effectiveness by engaging missiles as they transition from exo- to endo- atmospheric flight where the reentry vehicles are more vulnerable. The flow down of BMD System capability specifications resulting from the Missile Defense National Team efforts in Command & Control/Battle Management Communications (C2BMC) and Systems Engineering & Integration will guide the integration of the TDS into the BMD System and the BMDS C2BMC architecture. Block 06 THAAD further enhances the Missile Defense Agency's Terminal Defense Segment by deepening, complementing, and extending the BMDS battlespace and capability to engage and negate ballistic missiles and asymmetric threats in both the later mid-course and terminal phases of their trajectory. Block 06 THAAD's highly mobile capability provides BMDS the ability to defend against all ranges of ballistic missiles and asymmetric threats protects U.S. and allied armed forces, broadly dispersed assets and population centers and selected U.S. sites (Homeland Defense) against ballistic missile attacks. The Block 06 THAAD Element allows for coordinated engagements with BMDS via the BMDS C2BMC network. THAAD, in conjunction with the fielded Patriot System provides the Terminal Defense layer. As part of its ongoing contract efforts, the Block 06 THAAD program supports the MDA objective of enhancing the BMDS capability. The THAAD Block 06 program is funded to support the Agency's objective of putting the BMDS on alert and the objective to develop procedures and logistics to perform and sustain concurrent testing and operations. A THAAD firing unit consisting of 24 missiles, one radar, three launchers, and one C2BMC will be procured beginning in FY07.

Five major components (missiles, launchers, radar(s), Command and Control Battle Management Communications (C2BMC), and THAAD-specific support equipment will be integrated into the THAAD element and the Ballistic Missile Defense System (BMDS). THAAD 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, using both THAAD System and components to address National Team gap analysis of Engagement Support Groups, identifying and documenting both system component capabilities and planning for the integration and implementation of both THAAD System and component capabilities.

Block 2006: Block 2006 represents the second incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. This block builds on the core, near-term ballistic missile and asymmetric threat defense capability provided to the BMDS by THAAD Block 2004. Additionally, THAAD Block 2006 will initiate fielding to support the BMDS infrastructure. This block continues the concept of being rapidly deployable and expands the capabilities of the THAAD system to address improved Exo and Endo capability against increasingly complex targets. The Block 2006 THAAD element will have robust radar discrimination, capability in stressing Exo and Endo battlespace; Salvo firing doctrine; and operate in a full spectrum of tactical missile environments and survivability. Block 2006 also includes C2BMC embedded training, automated defense planning, and extensive interoperability using Link-16 and Joint Mission Management Network (JMMN) and United States Message Text Format (USMTF) message set with BMDS and forward base engagement coordination with other BMDS elements. Block 2006 THAAD adds to capability for AEGIS to conduct remote engagement sequences to the Block 2004 baseline engagement sequence groups. Block 2006 flight testing begins in 3rd quarter, FY 2006 and continues through 1st quarter, FY 2008 with a total of 5 flight tests.

RDT&E Articles for Development Tests (DT):

- FY 2005 (Buy Schedule): 1 Full-up Missile; 1 Ground Test Unit; 1 Radar; 2 Engineering Development Units; 1 additional Missile Round Pallet (MRP) for a total of 6 RDT&E articles.

- FY 2006 (Delivery Schedule): 4 additional MRPs.
- FY 2006 (Buy Schedule): 7 Full-up Missiles; 1 EDU; 3 C2BMC Tactical Station Groups; 4 MRPs for a total of 15 RDT&E articles.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

- FY 2007 (Delivery Schedule): 8 Full-up Missiles; 1 GTU; 3 EDUs; 1 Radar; 1 additional MRP for a total of 14 RDT&E articles.

- FY 2008 (Delivery Schedule): 1 C2BMC TSG.

- FY 2009 (Delivery Schedule): 2 C2BMC TSGs.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
THAAD Block 2006 ACD&P (Missile)		15,037	91,833
RDT&E Articles (Quantity)			

FY 2004 Planned Program:

- Initiate upgrades to the Missile software.

FY 2005 (Buy Schedule): 1 Full-up Missile; 1 Ground Test Unit; 2 Engineering Development Units.

FY 2005 Planned Program:

- Continue upgrades to the Missile software.
- Conduct System Integration Laboratory (SIL) Hardware-in-the-Loop integration activities of hardware and software in preparation of Block 2006 flight testing.
- Initiate fabrication, assembly, and test of Missile hardware in preparation for Block 2006 flight testing and missile rounds required for Missile Block Qualification Testing (BQT) and insensitive munitions testing.

	FY 2003	FY 2004	FY 2005
THAAD Block 2006 ACD&P (Radar)		3,038	57,077
RDT&E Articles (Quantity)			

FY 2004 Planned Program:

- Initiate upgrades to the Radar software.

FY 2005 Planned Program:

RDT&E Articles for Developmental Test (DT):

FY 2005 (Buy Schedule): 1 Radar.

- Continue upgrades to the Radar software.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

- Begin fabrication, assembly, and test of radar hardware for Radar #2.
- Conduct System Integration Laboratory Hardware-in-the-Loop integration activities for hardware and software in preparation for Block 2006 flight testing.

	FY 2003	FY 2004	FY 2005
THAAD Block 2006 ACD&P (Launcher)		265	5,688
RDT&E Articles (Quantity)			

FY 2004 Planned Program:

- Begin preparation for fabrication, assembly, and test of Launcher hardware for first Block 2006 flight testing.

FY 2005 (Buy Schedule): 1 additional Missile Round Pallet (MRP).

FY 2005 Planned Program:

- Complete fabrication, assembly, and test of Launcher hardware for Block 2006 Flight Testing and Block Qualification Testing (BQT).
- Conduct System Integration Laboratory (SIL) Hardware-in-the-Loop integration activities of hardware and software in preparation of Block 2006 flight testing.
- Initiate upgrade to Launcher software.

	FY 2003	FY 2004	FY 2005
THAAD Block 2006 ACD&P Integrated Logistics Support (ILS)		1,204	5,667
RDT&E Articles (Quantity)			

FY 2004 Planned Program:

- Maintain an Integrated Logistics Support program.
- Conduct supportability demonstrations on Launcher and C2BMC.
- Continue from Block 2004 development of support documentation and training for Soldier in the Loop.
- Continue from Block 2004 development and procurement of additional training devices and Peculiar Support Equipment.
- Conduct training to support the Block 2006 Test program.

FY 2005 Planned Program:

- Maintain an Integrated Logistics support program.
- Initiate Contractor Logistic support for Block 2006.
- Conduct supportability demonstrations on Radar.
- Continue development of support documentation for Staff Planners and other Military Occupational Specialty (MOS) Training.
- Initiate the development, design and procurement of additional training devices and Peculiar Support Equipment to support Block 2006.
- Conduct training to support the Block 2006 Flight Test program.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

	FY 2003	FY 2004	FY 2005
THAAD Block 2006 ACD&P (Sys Level Prog Mgmt)		4,542	31,534
RDT&E Articles (Quantity)			

FY 2004 Planned Program:

- Conduct Threat Vulnerability Assessment.
- Conduct Test Planning and Range Operations for Block 2006 flight testing.
- Provide management, leadership, and planning for all Block 2006 activities.
- Support BMDS National Team efforts through:
-- Conducting gap analysis to provide cues for other BMDS elements, extending the effective battlespace of the BMDS, enhancing tracking and discrimination to allow possible identification of threat kill vehicles and providing track and discrimination data to other elements and the C2BMC to be used for hit/kill assessment.
-- Coordinating with the National Team to identify and document both THAAD system and component capabilities in the capabilities specification.
-- Planning the integration and implementation of THAAD and its components in the BMDS.

FY 2005 Planned Program:

- Continue Threat Vulnerability Assessment.
- Continue Test Planning and Range Operations for Block 2006 flight testing.
- Provide management, leadership, and planning for all Block 2006 activities.
- Support BMDS National Team efforts through:
-- Conducting gap analysis to provide cues for other BMDS elements, extending the effective battlespace of the BMDS, enhancing tracking and discrimination to allow possible identification of threat kill vehicles and providing track and discrimination data to other elements and the C2BMC to be used for hit/kill assessment.
-- Coordinating with the National Team to identify and document both THAAD system and component capabilities in the capabilities specification.
-- Planning the integration and implementation of THAAD and its components in the BMDS.

	FY 2003	FY 2004	FY 2005
THAAD Block 2006 ACD&P (Weapon Sys Engr & Integ Team)		1,970	14,950
RDT&E Articles (Quantity)			

FY 2004 Planned Program:

- Plan for System Integration Lab (SIL) Hardware-in-the-Loop Block 2006 integration.
- Support BMDS National Team efforts.

FY 2005 Planned Program:

- Provide Weapon System Engineering support for the Radar Build 4.2 and C2BMC Build 5 CDRs.
- Conduct System Integration Lab (SIL) Hardware-in-the-Loop Block 2006 integration.
- Perform System Analysis Block 6 Scenarios and Designs.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

- Perform Parametric Performance Assessments.
- Support BMDS National Team efforts.

	FY 2003	FY 2004	FY 2005
THAAD Block 2006 ACD&P (Ground and Flight Test Support)		1,192	12,924
RDT&E Articles (Quantity)			

FY 2004 Planned Program:

- Support Block Qualification Testing (BQT) planning.
- Conduct Pacific Missile Range Facility (PMRF) integration.

FY 2005 Planned Program:

- Support Block Qualification Testing (BQT) planning.
- Launch & Test Support Equipment (L&TSE) transfer and range integration.
- Component integration planning to support flight tests at PMRF.
- Target integration planning for Block 2006 flight testing.
- Conduct four flight tests at WSMR.

	FY 2003	FY 2004	FY 2005
THAAD Block 2006 ACD&P (C2BMC)		2,137	19,474
RDT&E Articles (Quantity)			

FY 2004 Planned Program:

- Continue with the architectural design phase for the defined Build 5 functionality.
- Conduct the Build 5 architectural design incremental design review.

FY 2005 Planned Program:

- Complete the Build 5 detailed design phase for build 5 functionality.
- Conduct Block 2006 Product Management.
- Initiate System Engineering, Integration and Test for Flight Test.
- Prepare to conduct the Build 5 Critical Design Review (CDR).
- Complete Integration and Test environment Tools for Block 2006 Software.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

D. Acquisition Strategy

THAAD 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. The THAAD Block 2006 program is already on contract with Lockheed Martin Space Systems Company (LMSSC), Sunnyvale, CA. The 103-month Cost Plus Award Fee contract was awarded effective August 4, 2000, and is 50% complete. Block 2006 development activities could be used to provide a significant capability to protect deployed U.S. and allied forces, specified civilian population centers, or selected sites within the U.S.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
THAAD Block 2006 ACD&P (Missile)										
	SS/CPAF	LMSSC/ Various		15,037	1/3Q	91,833	1/2Q		106,870	CONT.
THAAD Block 2006 ACD&P (Radar)										
	SS/CPAF	LMSSC/ Various		3,038	1/3Q	57,077	1/2Q		60,115	CONT.
THAAD Block 2006 ACD&P (Launcher)										
	SS/CPAF	LMSSC/ Various		265	1/3Q	5,688	1/2Q		5,953	CONT.
THAAD Block 2006 ACD&P (C2BMC)										
	SS/CPAF	LMSSC/ Various		2,137	1/3Q	19,474	1/2Q		21,611	CONT.
THAAD Block 2006 ACD&P Integrated Logistics Support (ILS)										
	SS/CPAF	LMSSC/ Various		1,204	1/3Q	5,667	1/2Q		6,871	CONT.
THAAD Block 2006 ACD&P (Sys Level Prog Mgmt)										
	SS/CPAF	LMSSC/ Various		4,542	1/3Q	31,534	1/2Q		36,076	CONT.
THAAD Block 2006 ACD&P (Weapon Sys Engr & Integ Team)										
	SS/CPAF	LMSSC/ Various		1,970	1/3Q	14,950	1/2Q		16,920	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis									Date: February 2004	
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
THAAD Block 2006 ACD&P (Ground and Flight Test Support)										
	SS/CPAF	LMSSC/ Various		1,192	1/3Q	12,924	1/2Q		14,116	
Subtotal Product Development			0	29,385		239,147		0	268532	
Remarks										
II. Support Costs Cost ($ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Support Costs										
Remarks										
III. Test and Evaluation Cost ($ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Test and Evaluation										
Remarks										
IV. Management Services Cost ($ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Management Services										
Remarks										
Project Total Cost			0	29,385		239,147			268,532	
Remarks										

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Testing Milestones																												
Conduct Block 2006 Flight Test 6															Δ													
Conduct Block 2006 Flight Test 7																Δ												
Conduct Block 2006 Flight Test 8																			Δ									
Conduct Block 2006 Flight Test 9																				Δ								
Conduct Block 2006 Flight Test 10																					Δ							
BLOCK 2006																												
Pacific Missile Test Range Activation													Δ															
Flt 6 Missile Delivered to Range															Δ													
Flt 10 Missile Delivered to Range																					Δ							
Flt 10 Missile S/W Engr Release Integrated at SIL																		Δ										
Flt 10 Missile S/W Final Release Integrated at SIL																				Δ								
C2BMC B5 Design Readiness Review (DRR)										Δ																		
C2BMC B5 S/W Final Release Integrated at SIL																				Δ								
Launcher Available for Block Qualification Test									Δ																			
Launcher B4 S/W Final Release Integrated at SIL																				Δ								

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BLOCK 2006																												
Radar #2 Delivered To WSMR for Integration																Δ												
Radar #2 Available for Block Qualification Test																		Δ										
Radar B4.2 S/W Design Readiness Review (DRR)								Δ																				
Radar Data Collection Mission #1 Complete															Δ													
Radar B4.2 S/W Final Release Integrated at SIL																		Δ										

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones							
Conduct Block 2006 Flight Test 6				3Q			
Conduct Block 2006 Flight Test 7				4Q			
Conduct Block 2006 Flight Test 8					3Q		
Conduct Block 2006 Flight Test 9					4Q		
Conduct Block 2006 Flight Test 10						1Q	
BLOCK 2006							
Launcher Block Qualification Test (BQT)					2Q-4Q	1Q	
Pacific Missile Test Range Activation				1Q			
Flt 6 Missile Delivered to Range				3Q			
Flt 10 Missile Delivered to Range						1Q	
Flt 10 Missile S/W Engr Release Integrated at SIL					2Q		
Flt 10 Missile S/W Final Release Integrated at SIL					4Q		
C2BMC TSG Available for Block Qualification Test						4Q	
C2BMC B5 Design Readiness Review (DRR)			2Q				
C2BMC B5 S/W Engr Release Integrated at SIL					3Q		
C2BMC B5 S/W Final Release Integrated at SIL					4Q		
Launcher Available for Block Qualification Test			1Q				
Launcher B4 S/W Engr Release Integrated at SIL					3Q		
Launcher B4 S/W Final Release Integrated at SIL					4Q		
Radar #2 Delivered To WSMR for Integration				4Q			
Radar Prime Power Unit #1 Delivered					1Q		
Radar #2 Integration Complete at WSMR					1Q		
Radar #2 E3 Testing Complete					2Q		
Radar #2 Available for Block Qualification Test					2Q		
Radar Prime Power Unit #2 Delivered					4Q		
Radar B4.2 S/W Design Readiness Review (DRR)		4Q					
Radar Data Collection Mission #1 Complete				3Q			
Radar B4.2 S/W Engr Release Integrated at SIL					1Q		
Radar B4.2 S/W Final Release Integrated at SIL					2Q		
C2BMC Block Qualification Test (BQT)					2Q-4Q	1Q	

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Radar Block Qualification Test					2Q-4Q	1Q	
Missile Block Qualification Test					4Q	1Q	

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0907 Theater High Altitude Area Defense (THAAD) Block 2008	0	0	1,810	204,329	231,731	388,503	323,663
RDT&E Articles Qty	0	0	0	0	0	12	4

A. Mission Description and Budget Item Justification

The Theater High Altitude Area Defense (THAAD) is an element of the Terminal Defense Segment (TDS) of the Ballistic Missile Defense System (BMDS). The Terminal Defense Elements provide the final opportunity to engage all ranges of ballistic missiles not engaged or destroyed in the boost or mid-course phase of trajectory. Block 08 THAAD further enhances the Missile Defense Agency's Terminal Defense Segment by deepening, complementing, and extending the BMDS battlespace and capability to engage and negate ballistic missiles and asymmetric threats in both the later mid-course and terminal phases of their trajectory. Block 08 THAAD's highly mobile capability provides BMDS the ability to defend against all ranges of ballistic missiles and asymmetric threats; and protects U.S. and allied armed forces, broadly dispersed assets and population centers and selected U.S. sites (Homeland Defense) against ballistic missile attacks. The Block 08 THAAD Element allows for coordinated engagements with BMDS via the BMDS C2BMC network. THAAD, in conjunction with the fielded Patriot System, provides the Terminal Defense layer. As part of its ongoing contract efforts, the Block 08 THAAD program supports the MDA objective of enhancing the BMDS capability. Depending on the specific mission the MDA directs for THAAD; however, the Block 08 program is postured to support the Agency's objective of putting the BMDS on alert and the objective to develop procedures and logistics to perform and sustain concurrent testing and operations.

Five major components (missiles, launchers, radar(s), Command and Control Battle Management Communications (C2BMC), and THAAD-specific support equipment will be integrated into the THAAD element and Ballistic Missile Defense System (BMDS). THAAD 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.

Block 2008: Block 2008 represents the third incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. This block continues the concept of being rapidly deployable and builds on the core, ballistic missile and asymmetric threat defense capability provided to the BMDS by THAAD Block 2006. Block 2008 THAAD element also includes RF-linked launchers for improved defended area and self defense against intercontinental ballistic missiles, capability to launch THAAD interceptors on remote cues from other BMDS elements, and improved survivability, maintainability, and crew operator training capability. This block demonstrates the capabilities of the THAAD system in endo- and exo-atmospheric battlespace against the full threat set. Block 2008 flight testing begins in 2nd quarter, FY 2008 and ends in 2nd quarter, FY 2009 with a total of up to 6 flight tests.

RDT&E Articles for Development Tests (DT):

- FY 2006 (Buy Schedule): 8 Full-up Missiles; 1 Radar for a total of 9 RDT&E articles.
- FY 2007 (Buy Schedule): 4 Full-up Missiles; 5 Launchers w/Missile Round Pallets (MRPs) for a total of 9 RDT&E articles.
- FY 2008 (Delivery Schedule): 10 Full-up Missiles; 2 Launchers w/ MRPs for a total of 12 RDT&E articles.
- FY 2009 (Delivery Schedule): 2 Full-up Missiles; 1 Launcher w/ MRP; 1 Radar for a total of 4 RDT&E articles.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
THAAD Block 2008 ACD&P (Sys Level Prog Mgmt)			1,810
RDT&E Articles (Quantity)			

FY 2005 Planned Program:
- Provide management, leadership, and planning for all Block 2008 activities.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

D. Acquisition Strategy

THAAD 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. Part of the THAAD Block 2008 program is already on contract with Lockheed Martin Space Systems Company (LMSSC), Sunnyvale, CA. The 103-month Cost Plus Award Fee contract was awarded effective August 4, 2000, and is 50% complete. Block 2008 development activities could be used to provide a significant capability to protect deployed U.S. and allied forces, dispersed assets, specified population centers, or wide areas of the U.S.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
THAAD Block 2008 ACD&P (Sys Level Prog Mgmt)										
	SS/CPAF	LMSSC/Various				1,810	1/2Q		1,810	CONT.
Subtotal Product Development			0	0		1,810		0	1810	

Remarks

II. Support Costs Cost ($ in Thousands)

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

Remarks

III. Test and Evaluation Cost ($ in Thousands)

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

Remarks

IV. Management Services Cost ($ in Thousands)

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

Remarks

Project Total Cost			0	0		1,810			1,810	

Remarks

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Testing Milestones																												
Block 2008 Flight Test 11																						Δ						
Block 2008 Flight Test 12																							Δ					
Block 2008 Flight Test 13																									Δ			
Block 2008 Flight Test 14																									Δ			
Block 2008 Flight Test 15																										Δ		
Block 2008 Flight Test 16																										Δ		
BLOCK 2008																												
Second SIL Line Operational																			Δ									
Flt 11 Missile Delivered to PMRF																					Δ							
Flt 16 Missile Delivered to OCONUS Range																									Δ			
Insensitive Munitions/Hazards Testing																					Δ	—	Δ					
Radar #3 Integration and Test Complete																								Δ				
Radar #3 Available for Element Demonstrations																								Δ				
Radar Data Collection Mission #2																						Δ						
Radar B4.2 Final Maintenance Release																									Δ			

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BLOCK 2008																												
C2BMC TSG Available for Operational Assessment																					Δ							
Launcher Available for Block Qualification Test																								Δ				
Launcher Available for Operational Assessment																									Δ			
Element Demonstrations																								Δ				Δ
Weapon System Characterization TIM Complete																										Δ		
Weapon Sys Element Char Complete																											Δ	

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones							
Block 2008 Flight Test 11						2Q	
Block 2008 Flight Test 12						3Q	
Block 2008 Flight Test 13							1Q
Block 2008 Flight Test 14							1Q
Block 2008 Flight Test 15							2Q
Block 2008 Flight Test 16							2Q
BLOCK 2008							
Second SIL Line Operational					3Q		
Flt 11 Missile Delivered to PMRF						1Q	
Flt 16 Missile Delivered to OCONUS Range							1Q
Insensitive Munitions/Hazards Testing						1Q-2Q	
Radar #3 Integration and Test Complete						4Q	
Radar #3 Available for Element Demonstrations						4Q	
Radar Prime Power Unit #3 Delivered						4Q	
Radar B4.2 Maintenance Release for RDC #2						2Q	
Radar Data Collection Mission #2						2Q	
Radar B4.2 Final Maintenance Release							1Q
C2BMC TSG Available for Operational Assessment						1Q	
Launcher Available for Block Qualification Test						4Q	
Launcher Available for Operational Assessment							1Q
Element Demonstrations						4Q	1Q-4Q
Weapon System Characterization TIM Complete							2Q
Weapon Sys Element Char Complete							3Q

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
2016 Israeli Arrow Program	124,594	0	0	0	0	0	0
RDT&E Articles Qty	42	0	0	0	0	0	0

Note: The FY04-09 funding for ARROW is captured in PE 0603881C in Project 0401.

A. Mission Description and Budget Item Justification

This project provides funding for the Arrow system development, to include the Arrow System Improvement Program (ASIP), testing of the Arrow Weapon System in the U.S., enhancement of Arrow interoperability with U.S. ballistic missile defense systems, Israeli Systems Architecture and Integration (ISA&I) studies to assess Arrow's effectiveness against emerging threats, and Israeli Test Bed (ITB) experiments to evaluate human-in-the-loop battle management and command, control, and communications. The United States derives considerable benefits from its participation in these projects. The presence of a ballistic missile defense system in Israel developed under this project helps ensure U.S. freedom of action in future contingencies and provides protection against ballistic missile attacks to U.S. forces deployed to the region. The cooperative effort also provides risk reduction and alternative technologies for U.S. ballistic missile defense programs as well as phenomenology and kill assessment data. The ASIP effort will enhance the performance of the Arrow Weapon System (AWS) to defeat longer-range and more robust Tactical Ballistic Missile (TBM) threats expected to be introduced in the Middle East in the near future. The ASIP also includes baseline testing of the AWS at a U.S. test range against today's existing TBM threats as well as testing of the enhanced AWS against longer range threats. The ITB and ISA&I efforts will continue to support AWS and ASIP development as well as to define future missile defense architectures to maintain pace with emerging threats.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Arrow System Improvement Program (ASIP)	54,996		
RDT&E Articles (Quantity)	2		

FY 2003: Continued ASIP Phase II to develop and test technologies to improve Arrow Weapon System performance to defend Israel from emerging TBM threats. ASIP includes technology development, enhanced interoperability and preparatory activities for conducting flight tests of the baseline AWS at a U.S. test range. Developed and tested enhanced Israel Missile Defense Architecture (IMDA) Link-16 interoperability capabilities. Conducted Arrow developmental flight test in Israel. Continue enhancing and testing Arrow interoperability capability.

	FY 2003	FY 2004	FY 2005
Arrow Enhanced Component Production	25,294		
RDT&E Articles (Quantity)			

FY 2003: Continued the development of Arrow component production capability in the U.S. to accelerate Israeli acquisition of Arrow interceptors.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

	FY 2003	FY 2004	FY 2005
Israeli Test Bed (ITB)	3,400		
RDT&E Articles (Quantity)			

FY 2003: Conducted Israeli Test Bed (ITB) experiments to evaluate battle management concepts and to assess interoperability between AWS and U.S. BMDS elements. ITB also evaluated ASIP performance specifications against future threats and assess Arrow enhanced interoperability between Israeli and U.S. missile systems. Supported EUCOM/IAF revisions to the combined OPLAN and CSOP. Conducted experiments of planned Arrow block upgrades to the AWS to assess their impacts on EUCOM/IAF combined operations.

	FY 2003	FY 2004	FY 2005
Israeli Systems Architecture and Integration (ISA&I)	1,900		
RDT&E Articles (Quantity)			

FY 2003: Continued Israeli Systems Architecture and Integration (ISA&I) assessment to develop options for 2015 Israeli Missile Defense architectures. Assessed Arrow performance against emerging regional TBM threats and identified growth path refinements necessary for the Arrow missile defense system to remain an effective ballistic missile defense for the State of Israel. Evaluated Israeli architecture studies to assess near-term U.S. missile defense systems and their impact on future Israeli missile defense architectures.

	FY 2003	FY 2004	FY 2005
Program Support	934		
RDT&E Articles (Quantity)			

FY 2003: Developed hardware-in-the-loop test tools for assessment of interoperability. Developed draft security plans and classification guides. Developed Arrow background/foreground data rights update for ADP and initial draft ASIP and Arrow co-production Master Technology Lists.

	FY 2003	FY 2004	FY 2005
Arrow Missile Production	38,070		
RDT&E Articles (Quantity)	40		

FY 2003: Cooperatively produce Arrow missiles to meet Israel's defense requirements. Initiated procurement of long-lead items and developed tooling and test equipment for transfer to the U.S. co-producer. The cooperative production program will consist of the manufacture of certain Arrow components in the U.S. with other components manufactured in Israel. Missile final assembly will take place in Israel.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

D. Acquisition Strategy

ASIP - Israel Ministry of Defense (IMoD) contracts on behalf of U.S. government to IAI and other ASIP contractors. MDA Targets Office contracts for production and instrumentation of targets for U.S. flight testing.

Arrow Enhanced Components Production - IMoD contracts on behalf of U.S. government to IAI. IAI subcontracts to Boeing for development of U.S. production capability.

Arrow Missile Production - IMoD contracts on behalf of U.S. government to IAI. IAI subcontracts to Boeing for manufacture of U.S. components. IAI manufactures Israeli components and performs final assembly.

Israeli Test Bed - SMDC contracts to Tadiran.

Israeli System Architecture and Integration - MDA contracts to WALES, Ltd.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Arrow System Improvement Program (ASIP)										
Arrow System Improvement Program (ASIP)		IAI/ Israel	102,000					110,000	212,000	
Arrow Enhanced Component Production										
Arrow Enhanced Component Production		Boeing/IAI/ Alabama/Israel	38,655						38,655	
Israeli Test Bed (ITB)										
Israeli Test Bed (ITB)	FFP	Tadiran/ Israel	5,600					7,091	12,691	
Israeli Systems Architecture and Integration (ISA&I)										
Israeli Systems Architecture and Integration (ISA&I)	FFP	Wales, Ltd/ Israel	3,411					4,368	7,779	
Arrow Missile Production										
Arrow Missile Prod	Various	Boeing/IAI/ Alabama/Israel								
Subtotal Product Development			149,666	0		0		0	271125	

Remarks

II. Support Costs Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Support										
Program Support	Various	Various/ Alabama / Virginia	5,000					2,000	7,000	
Subtotal Support Costs			5,000	0		0		0	7000	

Remarks

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

III. Test and Evaluation Cost ($ in Thousands)

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

Remarks

IV. Management Services Cost ($ in Thousands)

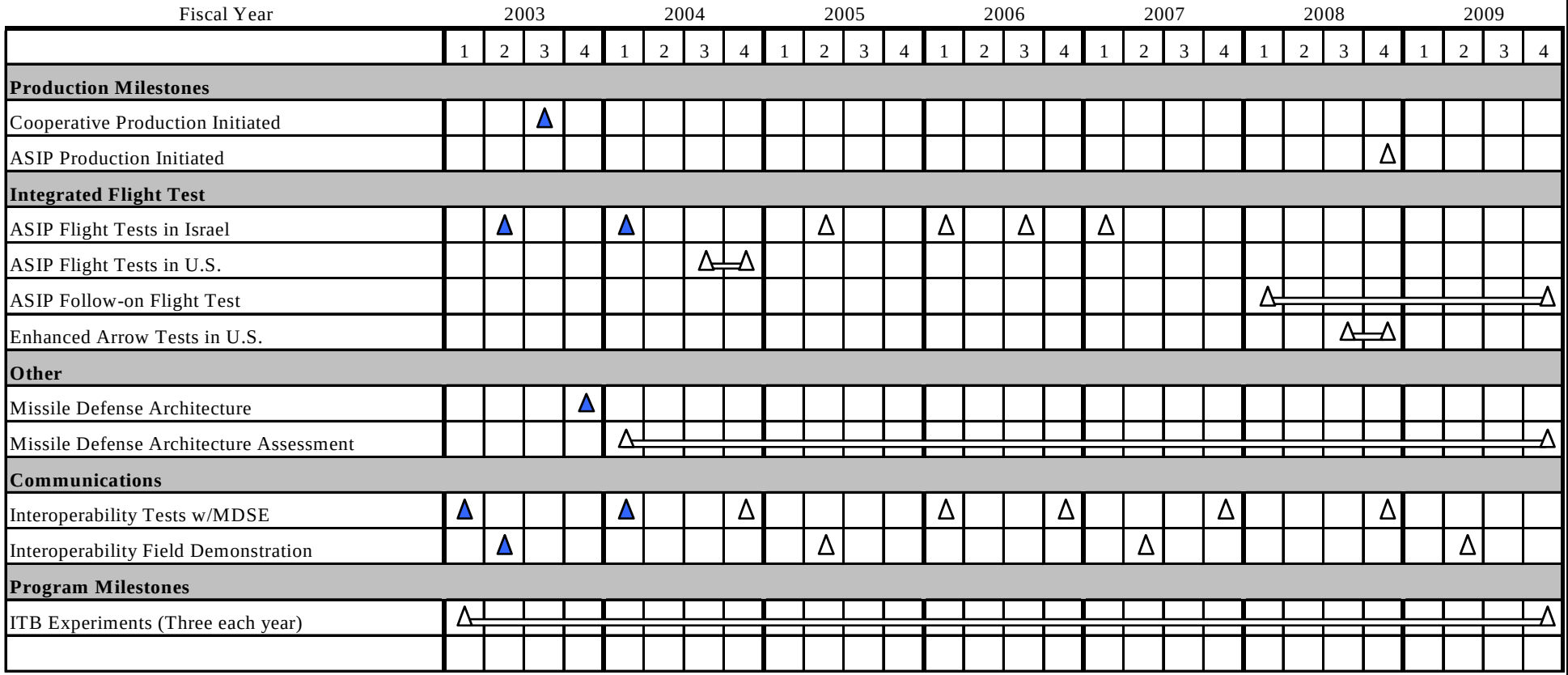
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Management Services										

Remarks

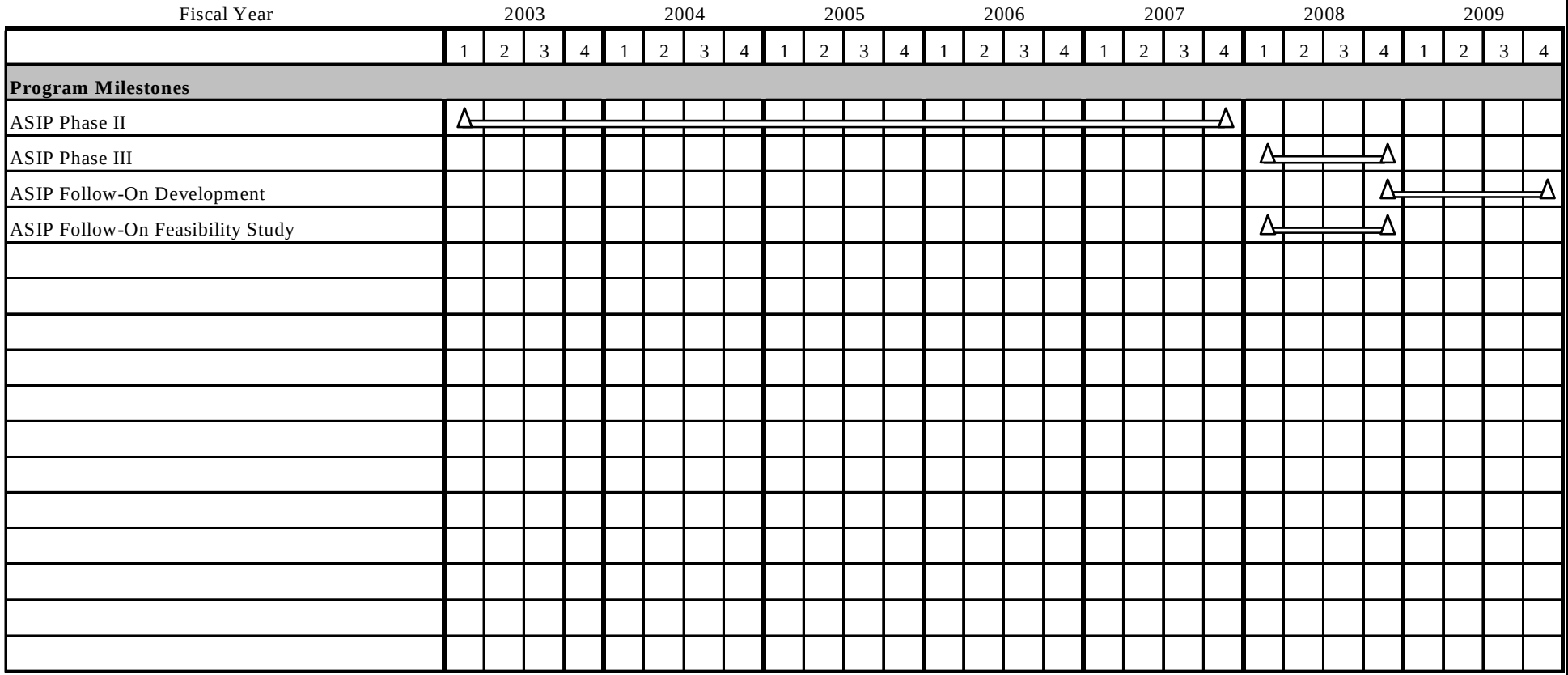
Project Total Cost			154,666	0		0			278,125	

Remarks

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Production Milestones							
Cooperative Production Initiated	3Q						
ASIP Production Initiated						4Q	
Integrated Flight Test							
ASIP Flight Tests in Israel	2Q	1Q	2Q	1Q,3Q	1Q		
ASIP Flight Tests in U.S.		3Q-4Q					
ASIP Follow-on Flight Test						1Q-4Q	1Q-4Q
Enhanced Arrow Tests in U.S.						3Q-4Q	
ASIP Flight Test in Israel	2Q			1Q,3Q	1Q		
Other							
Missile Defense Architecture	4Q						
Missile Defense Architecture Assessment		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Communications							
Interoperability Tests w/MDSE	1Q	1Q,4Q		1Q,4Q	4Q	4Q	
Interoperability Field Demonstration	2Q		2Q		2Q		2Q
Program Milestones							
ITB Experiments (Three each year)	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
ASIP Phase II	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
ASIP Phase III						1Q-4Q	
ASIP Follow-On Development						4Q	1Q-4Q
ASIP Follow-On Feasibility Study						1Q-4Q	

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0401 Israeli Arrow Program	0	143,151	87,290	79,001	78,954	79,001	79,062
RDT&E Articles Qty	0	59	14	7	7	7	7

Note: The FY03 funding for ARROW is captured in PE 0603881C in Project 2016.

A. Mission Description and Budget Item Justification

This project provides funding for the Arrow system development, to include the Arrow System Improvement Program (ASIP), testing of the Arrow Weapon System in the U.S., enhancement of Arrow interoperability with U.S. ballistic missile defense systems, Israeli Systems Architecture and Integration (ISA&I) studies to assess Arrow's effectiveness against emerging threats, and Israeli Test Bed (ITB) experiments to evaluate human-in-the-loop battle management and command, control, and communications. The United States derives considerable benefits from its participation in these projects. The presence of a ballistic missile defense system in Israel developed under this project helps ensure U.S. freedom of action in future contingencies and provides protection against ballistic missile attacks to U.S. forces deployed to the region. The cooperative effort also provides risk reduction and alternative technologies for U.S. ballistic missile defense programs as well as phenomenology and kill assessment data. The ASIP effort will enhance the performance of the Arrow Weapon System (AWS) to defeat longer-range and more robust Tactical Ballistic Missile (TBM) threats expected to be introduced in the Middle East in the near future. The ASIP also includes baseline testing of the AWS at a U.S. test range against today's existing TBM threats as well as testing of the enhanced AWS against longer range threats. The ITB and ISA&I efforts will continue to support AWS and ASIP development as well as to define future missile defense architectures to maintain pace with emerging threats.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Arrow System Improvement Program (ASIP)		55,000	56,478
RDT&E Articles (Quantity)		8	2

FY 2004: Conduct Arrow developmental flight test in Israel in preparation for intercept testing in the U.S. against representative regional Tactical Ballistic Missile (TBM) threats. Conduct developmental flight test in Israel. Continue ASIP Phase II to develop and test technologies to improve Arrow Weapon System performance to defend Israel from emerging TBM threats. Continue enhancing Arrow interoperability. Obtain Joint Interoperability Test Command certification of the IMDA interoperability enhancements.

FY 2005: Continue ASIP Phase II to develop and test technologies to improve Arrow Weapon System performance to defend Israel for emerging TBM threats. Conduct Arrow flight test in Israel. Conduct Arrow flight test in Israel. Continue enhancing Arrow interoperability development and validation to include engagement coordination.

RDT&E Articles: (Eight Missiles Total) Three Block III Arrow II test missiles for intercept testing, One Black Sparrow test missile target; and two liquid fuel test missile targets and two air-launched short-range target missiles for U.S. Arrow testing.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

	FY 2003	FY 2004	FY 2005
Arrow Enhanced Component Production		4,000	
RDT&E Articles (Quantity)		1	

FY 2004: Complete the development of Arrow production capability to produce Arrow components in the U.S. to accelerate Israeli acquisition of Arrow interceptor missiles. Provide components to Israel for final interceptor integration. Produce sufficient component quantities in the U.S. to qualify production processes and transition Arrow co-production of the Arrow Missile Production Program (AMPP).

RDT&E Articles: One proof of concept co-produced Arrow II missile.

	FY 2003	FY 2004	FY 2005
Israeli Test Bed (ITB)		3,400	3,400
RDT&E Articles (Quantity)			

FY 2004: Conduct ITB experiments to support development of centralized battle management. Assess Arrow interoperability between Israeli and U.S. missile defense systems. Provide support to U.S. European Command and Israeli Air Force (EUCOM/IAF) to conduct ITB experiments to support the addition of the operational AWS and block upgrades into the combined Operations Plan (OPLAN) and Combined Standard Operating Procedures (CSOP). Conduct experiments of planned Arrow block upgrades to the AWS and assess their impacts on EUCOM/IAF combined operations.

FY 2005: Conduct ITB experiments to support development of centralized battle management. Evaluate ASIP performance specifications against future threats and assess Arrow enhanced interoperability between Israeli and U.S. missile defense systems. Support EUCOM/IAF revisions to the combined OPLAN and CSOP. Conduct experiments of planned Arrow block upgrades to the AWS and assess their impacts on EUCOM/IAF combined operations.

	FY 2003	FY 2004	FY 2005
Israeli Systems Architecture and Integration (ISA&I)		1,960	1,960
RDT&E Articles (Quantity)			

FY 2004: Develop initial Israeli Missile Defense System (IMDS) architecture and system level design.

FY 2005: Assess IMDS performance against emerging regional TBM threats. Refine growth path options necessary for the Arrow missile defense system to remain an effective ballistic missile defense for the State of Israel. Evaluate Israeli architecture studies to assess near-term U.S. missile defense systems and their impact on contributing to future Israeli missile defense architectures.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

	FY 2003	FY 2004	FY 2005
Program Support		1,000	934
RDT&E Articles (Quantity)			

FY 2004: Develop and maintain ASIP and co-production security plans and classification guides. Modify Missile Defense System Exerciser (MDSE) to support interoperability assessment. Manage and support ITB modifications and experiments. Complete documentation of background/foreground data rights for ASIP, Arrow co-production, and update the ITB Master Technology List. Maintain security plans and classification guides. Manage and support ITB modifications and experiments.
FY 2005: Continue documentation of background/foreground data rights for ASIP, Arrow co-production, and ITB. Maintain security plans and classification guides. Manage and support ITB modifications and experiments. Support Missile Defense System Exerciser testing centralizes at the Joint National Integration center.

	FY 2003	FY 2004	FY 2005
Arrow Missile Production		77,791	24,518
RDT&E Articles (Quantity)		50	12

FY 2004: Cooperatively produce Arrow missiles to meet Israel's defense requirements. The cooperative production program will consist of the manufacture of certain Arrow components in the U.S. with other components manufactured in Israel. Missile final assembly will take place in Israel.

RDT&E Articles: Fifty Arrow II missiles.

C. Other Program Funding Summary

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

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing

D. Acquisition Strategy

ASIP - Israel Ministry of Defense (IMoD) contracts on behalf of U.S. government to IAI and other ASIP contractors. MDA Targets Office contracts for production and instrumentation of targets for U.S. flight testing.

Arrow Enhanced Components Production - IMoD contracts on behalf of U.S. government to IAI. IAI subcontracts to Boeing for development of U.S. production capability.

Arrow Missile Production - IMoD contracts on behalf of U.S. government to IAI. IAI subcontracts to Boeing for manufacture of U.S. components. IAI manufactures Israeli components and performs final assembly.

Israeli Test Bed - SMDC contracts to Tadiran.

Israeli System Architecture and Integration - MDA contracts to WALES, Ltd.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Arrow Enhanced Component Production										
Arrow Enhanced Component Production		Boeing/IAI/ Ala/Israel	38,655	4,000					42,655	
Arrow System Improvement Program (ASIP)										
Arrow System Improvement Program (ASIP)		IAI/ Israel	102,000	55,000	1Q	56,350	1Q	110,000	323,350	
Israeli Test Bed (ITB)										
Israeli Test Bed (ITB)	FFP	Tadiran/ Israel	5,600	3,400	1Q	3,400	1Q	7,091	19,491	
Israeli Systems Architecture and Integration (ISA&I)										
Israeli Systems Architecture and Integration (ISA&I)	FFP	Wales, Ltd/ Israel	3,411	1,960	1Q	2,022	1Q	4,368	11,761	
Arrow Missile Production										
Arrow Missile Production	Various	Boeing/IAI/ Ala/Israel	38,070	77,791		24,518			140,379	
Subtotal Product Development			187,736	142,151		86,290		0	537636	

Remarks

II. Support Costs Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Support										
Program Support	Various	Various/ Ala/Va	5,000	1,000	1Q	1,000	1Q	2,000	9,000	
Subtotal Support Costs			5,000	1,000		1,000		0	9000	

Remarks

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

III. Test and Evaluation Cost ($ in Thousands)

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

Remarks

IV. Management Services Cost ($ in Thousands)

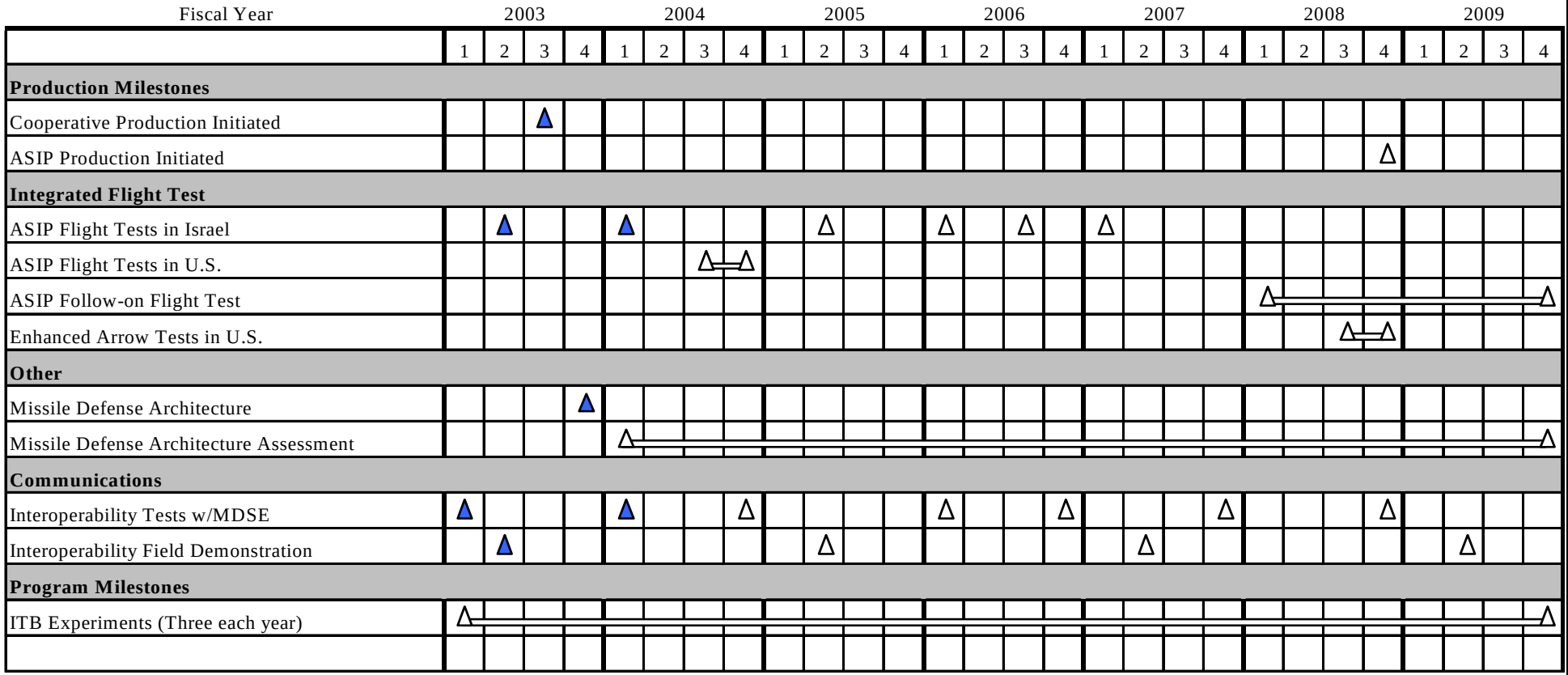
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Management Services										

Remarks

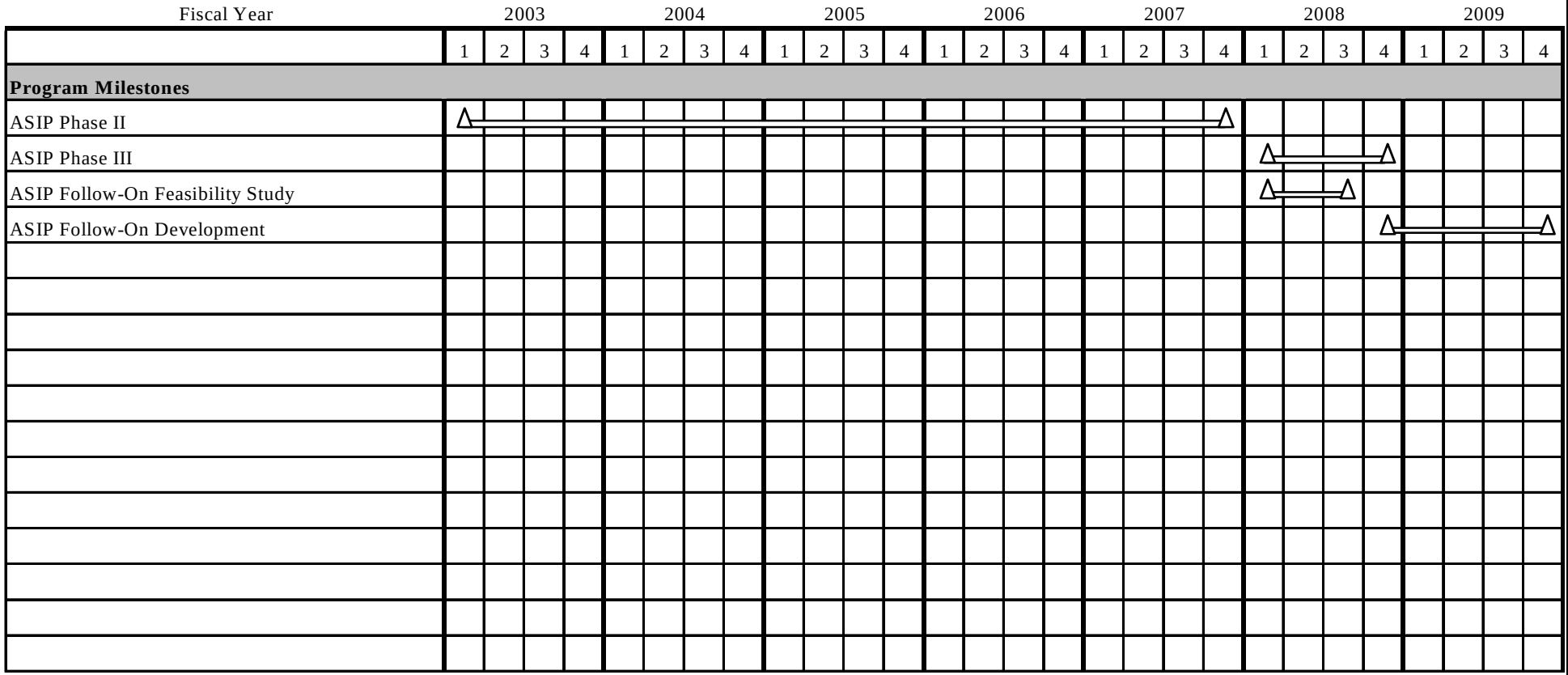
Project Total Cost			192,736	143,151		87,290			546,636	

Remarks

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Production Milestones							
Cooperative Production Initiated	3Q						
ASIP Production Initiated						4Q	
Integrated Flight Test							
ASIP Flight Tests in Israel	2Q	1Q	2Q	1Q,3Q	1Q		
ASIP Flight Tests in U.S.		3Q-4Q					
ASIP Follow-on Flight Test						1Q-4Q	1Q-4Q
Enhanced Arrow Tests in U.S.						3Q-4Q	
Other							
Missile Defense Architecture	4Q						
Missile Defense Architecture Assessment		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Communications							
Interoperability Tests w/MDSE	1Q	1Q,4Q		1Q,4Q	4Q	4Q	
Interoperability Field Demonstration	2Q		2Q		2Q		2Q
Program Milestones							
ITB Experiments (Three each year)	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
ASIP Phase II	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
ASIP Phase III						1Q-4Q	
ASIP Follow-On Feasibility Study						1Q-3Q	
ASIP Follow-On Development						4Q	1Q-4Q

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
2090 Program-Wide Support	9,499	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: Fiscal Year 2003 is reflected in Project 2090 and Fiscal Years 2004 and out are in Project 0602.

A. Mission Description and Budget Item Justification

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

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

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

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

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

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Civilian Salaries and Support	9,499	0	0
RDT&E Articles (Quantity)			

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

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

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

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

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

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

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

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0602 Program-Wide Support	0	15,066	16,663	20,970	16,445	11,182	7,599
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: Fiscal Year 2003 is reflected in Project 2090 and Fiscal Years 2004 and out are in Project 0602.

A. Mission Description and Budget Item Justification

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

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

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

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

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

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Civilian Salaries and Support	0	15,066	16,663
RDT&E Articles (Quantity)			

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

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

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

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

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

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

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