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<b>Missile Defense Agency (MDA) Exhibit R-2 RDT&amp;E Budget Item Justification</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147
0907 Terminal High Altitude Area Defense (THAAD) Block 2008	974,142	918,420	733,126	574,963	244,659	28,446	28,704	25,537
0007 Terminal High Altitude Area Defense (THAAD) Block 2010	0	20,000	125,151	254,580	76,555	14,612	16,305	15,721
R107 Terminal High Altitude Area Defense (THAAD) Block 2012	0	0	0	67,815	505,440	713,382	538,723	365,121
0401 Israeli Arrow Program	123,459	134,985	73,572	74,515	78,163	79,511	81,927	83,238
0406 Short Range Ballistic Missile Defense	0	0	7,000	9,000	0	0	0	0
0806 PAC-3 Block 2006	0	1,593	982	0	0	0	0	0
0602 Program-Wide Support	23,278	17,078	22,754	23,409	19,284	15,262	13,035	11,530
Amount Included in PE 0904903D					-158,996	-140,766	-334,547	-316,254
Total PE Cost Reflected in R-1	1,120,879	1,092,076	962,585	1,004,282	765,105	710,447	344,147	184,893

*Note: The David's Sling Short Range Ballistic Missile Defense Program (SRBMD) will start Full Scale Development and has been moved to a new budget project 0406. In FY06 and FY07 related tasks were completed under the Arrow System Improvement Program Memorandum of Agreement (MOA) under project 0401.*

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

**A.1 System Element Description**

As part of the total Ballistic Missile Defense System (BMDS), the Terminal Defense Segment (TDS) Program Element (PE) funds the terminal-related element portions of Blocks 2008, 2010 and 2012 and other Terminal-related mission area investment activities. The TDS elements and activities include Terminal High Altitude Area Defense (THAAD) and the Israeli Arrow Program. The BMDS elements in terminal defense pursue development and selective upgrades of interceptor defense capabilities that engage short to medium-range ballistic missiles in the late mid-course and terminal phase of their trajectory. As part of the integrated, layered 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 of trajectory. The THAAD element enhances the BMDS by providing rapidly deployable ground-based interceptor defense components that deepen, complement, and extend the BMDS battlespace and capability to engage and negate ballistic missiles and asymmetric threats in both the late mid-course (outside the atmosphere) and terminal phase (inside the atmosphere) of their trajectory, making countermeasures difficult and significantly mitigates Weapons of Mass Destruction (WMD). This adds significant capability to the BMDS as the threat missiles transition from the mid-course to terminal phase.

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<p>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.</p> <p>Five major components (Interceptors, Launchers, Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radars, THAAD Fire Control and Communication (TFCC), and THAAD-Peculiar Support Equipment) will be integrated into the THAAD element and BMDS. The THAAD interceptor is a certified round that is propelled by a single-stage, solid-propellant rocket booster. Its kill vehicle possesses a divert and attitude control system and an infrared seeker used in destroying its target through hit-to-kill technology. The THAAD Launcher consists of a U.S. Army M1120 Heavy Expanded Mobility Tactical Truck-Load Handling System variant that transports an integrated interceptor round pallet and supports and secures eight ready-to-launch interceptors. The AN/TPY-2 Radar is an X-Band, solid state, phased array radar capable of tracking multiple threats and multiple interceptors during engagements. The AN/TPY-2 Radar uses fence, volume, and cued search modes and provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for the fire control. The AN/TPY-2 Radar hardware is a transportable system composed of the antenna equipment unit, electronics equipment unit, cooling equipment unit, and the prime power unit. The TFCC is composed of the Tactical Operations Station, the Launch Control Station, and the Station Support Group. These three components together are called the Tactical Station Group (TSG). A TFCC includes two TSGs. The TFCC provides the planning, control, coordination, execution, and communications necessary to fulfill the THAAD mission in a coherent and fully integrated fashion. It is interoperable with external air and interceptor defense and intelligence systems and agencies integrated into the BMDS.</p> <p>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.</p> <p>The Arrow program consists of the following major efforts: The Arrow System Improvement Program (ASIP) is a block upgrade of the Arrow Weapon System to enhance its capabilities against evolving regional threats. The program also includes the development of Arrow co-manufacturing capability, coproduction of the interceptor 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 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 the U.S., the Israeli Test Bed (ITB), and studies via the Israeli Systems Architecture and Integration (ISA&amp;I) effort that assess the Arrow performance relative to existing and emerging threats.</p>		

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<p>The David's Sling Weapon System (DSWS) is the new Short Range Ballistic Missile Defense (SRBMD) cooperative program between the U.S. and the State of Israel. The summer conflict between Israel and Hezbollah underscored the strategic effect of short range, inexpensive ballistic missiles attacks on civilian populations. The current Israeli Missile Defense Architecture (comprised of PATRIOT and Arrow) has capability against some of these short-range missile threats but does not provide a cost-effective defense. The goal of DSWS is to provide a lower cost (\$350K per missile) defense capability (as compared to the \$2-3M per Arrow or Patriot missile). With the completion of the Joint Feasibility and Risk Reduction study, the David's Sling Weapon System is beginning Full Scale Development.</p>		
<p><b><u>A.2 System Element Budget Justification and Contribution to the Ballistic Missile Defense System (BMDS)</u></b></p>		
<p>The THAAD element contributes to the BMDS by providing two engagement sequences, THAAD Interceptor Engage on Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) (THAAD Mode) Mod 1 and Standard Missile 3 (SM3) Launch on AN/TPY-2 Radar. When integrated into the BMDS with the BMDS Command Control/Battle Management Communications (C2BMC), AEGIS BMD and PATRIOT Systems, the rapidly deployable THAAD element improves the BMDS overall effectiveness by engaging interceptors as they transition from inside and outside the atmospheric flight. Consistent with the MDA block management framework, the THAAD system element consists of Blocks 2008, 2010 and 2012.</p>		
<p>Block 2008: THAAD spiral development began with the design and development of a significant, fundamental capability against short to medium-range Ballistic Missiles (BMs) and asymmetric threats inside and outside the atmosphere. Development through FY06 laid a foundation for THAAD Interceptor Engage on the AN/TPY-2 (THAAD Mode) Radar Engagement Sequence Group (ESG) capability. This initial phase also provided the capability for other BMDS Elements (AEGIS BMD, PATRIOT) to conduct engagement coordination with THAAD. Development evolves to achieve a more robust radar discrimination, advanced interceptor, fire control and launcher capabilities to facilitate communications to the BMDS and forward base engagement coordination with other BMDS elements. THAAD development adds additional capability for other BMDS elements such as the SM3 Launch on AN/TPY-2 (THAAD Mode) Radar. Block 2008 flight tests began in FY06 and continue into FY10. The THAAD element has the flexibility to evolve to the MDA objective of putting the BMDS on alert and conducting concurrent testing and operations. Block 2008 development is the foundation for the acquisition and delivery of Block 2008 THAAD Fire Unit #1 to support operational assessment and fielding of a BMDS capability useful to the combatant commanders. The delivery of Fire Unit #1 consists of 24 Interceptors, 3 Launchers, 1 AN/TPY-2 Radar, and 1 THAAD Fire Control and Communication (TFCC). Block 2008 also provides for field support and contractor logistics support for the fielded Fire Unit assets.</p>		

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Block 2010: Block 2010 provides continued manufacturing of Fire Unit hardware. In Block 2010, the THAAD Fire Unit #2 consisting of 24 Interceptors, 3 Launchers, 1 AN/TPY-2 Radar and 1 TFCC will be delivered. In addition, Block 2010 continues the field support and contractor logistics support for fielded Fire Unit assets.

Block 2012: Block 2012 is the next incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. This continues the concept of a rapidly deployable configuration to support the Terminal Defense Segment (TDS) mission as well as supporting the strategic surveillance missions. Continued development will include improved survivability of interceptors in a Level I High Altitude Environment Nuclear Survivability (HAENS) environment, provide the ability to participate in netted training exercises with BMDS Distributed Multi-echelon Training System (DMETS), include remotely placed launchers for an improved defended area and defense against Intermediate Range Ballistic Missiles (IRBMs), provide the capability to launch THAAD interceptors from other BMDS sensor elements, and expand the system's capability to provide THAAD sensor data to the BMDS. This adds the THAAD Interceptor Engage on AN/TPY-2 Radar using a cue from other BMDS sensors. Block 2012 also provides continued manufacturing of the Fire Unit hardware. In Block 2012, THAAD Fire Units #3 and #4 consisting of 48 Interceptors, 6 Launchers, 2 AN/TPY-2 Radars and 2 TFCCs will be delivered. Block 2012 continues the field support and contractor logistic support for fielded Fire Unit hardware.

**A.3 Major System Element Goals**

THAAD has goals that are synchronized with the overall MDA goals to meet the BMDS objectives in Blocks 2008, 2010, and 2012.

- Develop, test, and verify THAAD capability
- Provide, field and sustain THAAD capability for operational testing and BMDS defense operations
- Continue component development to enhance integrated BMDS capability and efficiency
- Test and verify enhanced integrated BMDS component capability in an increasingly complex BMDS test program
- Provide, field and sustain enhanced BMDS capabilities
- Integrate THAAD into the BMDS International Strategy
- Maintain a culture within THAAD that excels in a complex and uncertain environment
- Achieve world class business processes and battle rhythm using lean, six sigma improvement techniques

**A.4 Major Events Schedule and Description**

Major Event	Project	Timeframe	Description
<b>Flight Test</b>			
<b>Testing Milestones</b>			

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Major Event	Project	Timeframe	Description
Conduct FTT-01	0907	1Q FY 2006	• FTT-01 was successfully conducted on 22 Nov 05
Conduct FTT-02	0907	3Q FY 2006	• FTT-02 was successfully conducted with Virtual Target 11 May 06
Conduct FTT-03	0907	4Q FY 2006	• FTT-03 was successfully conducted with HERA Target on 12 Jul 06
Conduct FTT-04	0907	4Q FY 2006	• During FTT-04, program officials experienced a target malfunction and were prohibited from launching the interceptor. As a result, FTT-04 was deemed a "no test." Program officials plan to incorporate FTT-04 objectives into later flight tests.
Conduct FTT-06	0907	2Q FY 2007	• High endow intercept of unitary target at medium aspect
Conduct FTT-05	0907	2Q FY 2007 - 4Q FY 2007	• Low Endo Controlled Test Flight; Characterize missile flout
Conduct FTT-07	0907	3Q FY 2007 - 4Q FY 2007	• Mid endow intercept of unitary target at low aspect
Conduct FTT-08	0907	4Q FY 2007 - 1Q FY 2008	• Exo intercept of unitary target at high aspect
Conduct FTT-09	0907	2Q FY 2008 - 3Q FY 2008	• Salvo interceptors, mid endow intercept of separating target
Conduct FTT-10	0907	4Q FY 2008 - 1Q FY 2009	• Exo intercept of complex separating target with low signature target
Conduct FTT-11	0907	1Q FY 2009 - 2Q FY 2009	• Dual simultaneous engagement (Exo & High Endo) of two separating targets
Conduct FTT-12	0907	2Q FY 2009 - 3Q FY 2009	• Low endow intercept of complex separating target at low intercept scenario
Conduct FTT-13	0907	3Q FY 2009 - 4Q FY 2009	• Exo intercept of long range separating high velocity MRBM target
Conduct FTT-14	0907	1Q FY 2010 - 2Q FY 2010	• Exo intercept of long range separating high velocity MRBM target
<b>Contract Activity</b>			
<b>Contractual Activities &amp; Events</b>			
Fire Unit Fielding #1 and #2 Contract Award	0007	1Q FY 2007	• Manufacture 24 Interceptors; 2 Launchers; 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (Tags); Refurbish 1 Launcher
Fire Unit Radar #2 Contract Award	0007	2Q FY 2007	• Manufacture 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar
Fire Unit #1 and #2 Contract Award	0907	1Q FY 2007	• Manufacture 24 Interceptors; 3 Launchers
Field Support and CLS Contract Award	0907	1Q FY 2008	• Maintenance and support to fire units that have been delivered to the field
Fire Unit Fielding #3 and #4 Contract Award	R107	1Q FY 2009	• Manufacture 48 Interceptors; 6 Launchers; 4 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (Tags)
Fire Unit Radar #3 and #4 Contract Award	R107	1Q FY 2010	• Manufacture 2 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radars
<b>Delivery</b>			
<b>Deliveries</b>			
Fire Unit #2	0007	3Q FY 2009 - 4Q FY 2010	• 24 Interceptors; 3 Launchers (1 Launcher provided under development contract); 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar; 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)
Fire Unit #1	0907	2Q FY 2009 - 2Q FY 2010	• 24 Interceptors; 3 Launchers; 1 AN/TPY-2 Radar; 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) (2 TSGs and 1 AN/TPY-2 Radar provided under development contract)
Fire Unit #3	R107	3Q FY 2010 - 3Q FY 2012	• 24 Interceptors; 3 Launchers; 1 AN/TPY-2 Radar, 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)

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Major Event	Project	Timeframe	Description
Fire Unit #4	R107	4Q FY 2010 - 3Q FY 2013	<ul style="list-style-type: none"><li>• 24 Interceptors; 3 Launchers; 1 AN/TPY-2 Radar, 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)</li></ul>

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<b>B. Program Change Summary</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>
Previous President's Budget (FY 2007 PB)	1,139,757	1,038,310	904,198	682,033
Current President's Budget (FY 2008 PB)	1,120,879	1,092,076	962,585	1,004,282
Total Adjustments	-18,878	53,766	58,387	322,249
Congressional Specific Program Adjustments	0	58,400	0	0
Congressional Undistributed Adjustments	0	-4,634	0	0
Reprogrammings	2,568	0	0	0
SBIR/STTR Transfer	-21,451	0	0	0
Adjustments to Budget Years	0	0	58,387	322,249

FY06 decrease of \$18.878 million includes SBIR/STTR transfer and MDA reprogrammings.

FY07 increase of \$53.766 million includes a congressional specific program increase of \$58.400 million and a portion of the MDA congressional undistributed reduction.

FY08 increase of \$53.387 million and FY09 increase of \$317.249 million reflect MDA programmatic changes to support program requirements.

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COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0907 Terminal High Altitude Area Defense (THAAD) Block 2008	974,142	918,420	733,126	574,963	244,659	28,446	28,704	25,537
RDT&E Articles Qty	4	10	12	17	12	0	0	0
<p><i>Note: RDT&amp;E Articles for Development Tests: FY06 - Delivered 4 Full-up Interceptors; and Bought 8 Full-up Interceptors and 4 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs). FY07 - Deliver 6 Full-up Interceptors; 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar; 1 Launcher and 2 TFCC TSGs; Buy 1 Launcher. FY08 - Deliver 8 Full-up Interceptors; 3 TFCC TSGs, 1 Launcher.</i></p> <p><i>RDT&amp;E Articles for Fire Unit: FY07 - Buy 24 Full-up Interceptors, 2 Full-up Interceptors for Test and 3 Launchers. FY09 - Deliver 12 Full-up Interceptors, 2 Full-up Interceptors for Test, and 3 Launchers for Fire Unit #1. FY10 - Deliver 12 Full-up Interceptors.</i></p> <p><b><u>A. Mission Description and Budget Item Justification</u></b></p> <p>The Terminal High Altitude Area Defense (THAAD) is an element of the Terminal Defense Segment (TDS) of the Ballistic Missile Defense System (BMDS). The THAAD element provides the THAAD Interceptor Engage on Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) (THAAD Mode) engagement sequence of the BMDS. THAAD enhances the TDS by deepening, complementing, and extending the BMDS battlespace and capability to engage ballistic targets in the late mid-course and terminal phases of their trajectory. THAAD will also be a surveillance sensor, providing sensor data to cue other elements of the BMDS. THAAD, in conjunction with the fielded Patriot System, provides the TDS and supports the MDA objective of enhancing the BMDS capability. Five major components (Interceptors, Launchers, AN/TPY-2 Radar, THAAD Fire Control and Communication (TFCC), and Peculiar Support Equipment) will be integrated into the THAAD element and the BMDS.</p> <p>Block 2008: THAAD spiral development began with the design and development of a significant, fundamental capability against short to medium-range Ballistic Missiles (BMs) and asymmetric threats inside and outside the atmosphere. This encompasses the following: (1) Test interceptor with inside and outside the atmosphere algorithms; (2) AN/TPY-2 Radar with Initial Discrimination Capability; and (3) TFCC with Limited Tactical Digital Information Link and Defense Design Planner. Development through FY06 laid a foundation for THAAD Interceptor Engage on AN/TPY-2 (THAAD Mode) Radar Engagement Sequence Groups (ESG) capability. This initial phase also provided the capability for other BMDS Elements (AEGIS BMD, PATRIOT) to conduct engagement sequences with THAAD data over Link-16.</p> <p>Development evolves to achieve a more robust AN/TPY-2 Radar discrimination, intercept capability inside and outside the atmosphere battlespace, salvo firing doctrine, and the ability to operate in a full spectrum of tactical interceptor environments and survivability. To facilitate tactical</p>								



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employment by soldiers, it also includes TFCC embedded training, automated defense planning, and extensive interoperability using Link-16 and United States Message Text Format (USMTF) message set with BMDS and forward base engagement coordination with other BMDS elements. THAAD development adds additional capability for other BMDS elements such as the Standard Missile 3 (SM3) Launch on AN/TPY-2 Radar. Block 2008 flight tests began in FY06 and continue into FY10. The THAAD element has the flexibility to evolve to the MDA objective of putting the BMDS on alert and conducting concurrent testing and operations. The THAAD Element will provide coordinated engagements with BMDS via the BMDS Command Control/Battle Management Communications (C2BMC). Block 2008 development culminates in demonstrated THAAD capabilities in both inside and outside the atmosphere battlespace against the full spectrum of adversarial capabilities. The Block 2008 development is the foundation for the acquisition and delivery of Block 2008 THAAD Fire Unit #1 to support operational assessment and fielding of a BMDS capability useful to the combatant commanders. The delivery of Fire Unit #1 consists of 24 Interceptors, 3 Launchers, 1 AN/TPY-2 Radar and 1 TFCC. Block 2008 also provides for field support and contractor logistics support for the fielded Fire Unit assets.

**B. Accomplishments/Planned Program**

	FY 2006	FY 2007	FY 2008	FY 2009
Interceptor	422,182	287,017	72,417	49,751
RDT&E Articles (Quantity)	4	6	8	0

The THAAD Interceptor is a certified round that is propelled by a single-stage, solid-propellant rocket booster. Its kill vehicle possesses a Divert and Attitude Control System (DACS) and an infrared seeker used to destroy its target through hit-to-kill technology.

**FY06 Accomplishments:**

RDT&E Articles: Delivered 4 Full-Up Interceptors

- Supported flight testing at White Sands Missile Range (WSMR)
- Completed Interceptor Environments Phase II Ground Test
- Continued System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) integration activities of hardware and software in preparation for flight testing
- Continued fabrication, assembly, and test of hardware for flight test
- Continued upgrades to the interceptor software
- Continued interceptor contractor Qualification Testing
- Initiated fabrication, assembly, and test of interceptor hardware in preparation for Insensitive Munitions (IM) testing and missile rounds required for Interceptor Government Block Qualification Testing (BQT)
- Initiated early obsolescence upgrades to interceptor hardware

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<ul style="list-style-type: none"><li>• Initiated buy of 8 Full-Up Interceptors</li></ul> <p>FY07 Planned Program: RDT&amp;E Articles: Deliver 6 Full-Up Interceptors</p> <ul style="list-style-type: none"><li>• Continue SIL HWIL integration activities of hardware and software in preparation for flight testing</li><li>• Continue fabrication, assembly, and test of hardware for flight test and BQT</li><li>• Completed Interceptor Block Process Validation</li><li>• Complete Formal Release of interceptor software</li><li>• Support flight tests at WSMR and Pacific Missile Range Facility (PMRF)</li><li>• Complete interceptor contractor Qualification Testing</li><li>• Continue obsolescence upgrade for interceptor hardware</li></ul> <p>FY08 Planned Program: RDT&amp;E Articles: Deliver 8 Full-Up Interceptors</p> <ul style="list-style-type: none"><li>• Complete fabrication, assembly, and test of hardware</li><li>• Complete fabrication, assembly, and testing of hardware in preparation for interceptor Government BQT</li><li>• Initiate interceptor Government BQT</li><li>• Complete obsolescence upgrade for interceptor hardware</li><li>• Continue SIL HWIL integration activities of hardware and software in preparation for flight test and Government BQT</li><li>• Maintain Formal Release of interceptor software</li><li>• Support flight testing at PMRF</li></ul> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"><li>• Support flight testing at PMRF</li><li>• Continue to maintain Formal Release of interceptor software</li><li>• Continue SIL HWIL integration activities of hardware and software in preparation for flight testing</li><li>• Complete interceptor Government BQT</li></ul>		

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	FY 2006	FY 2007	FY 2008	FY 2009
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar	173,999	110,206	72,712	26,670
RDT&E Articles (Quantity)	0	1	0	0
<p>The AN/TPY-2 Radar is a solid state, phased array radar capable of tracking multiple threats and multiple interceptors during engagements. The AN/TPY-2 Radar uses fence, volume, and cued search modes, and provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for the fire control. The AN/TPY-2 Radar hardware is a transportable system composed of the antenna equipment unit, electronics equipment unit, cooling equipment unit, and the prime power unit.</p> <p><b>FY06 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• Integrated Formal Release of Software Build 4.1 in the System Integration Lab (SIL) for initial flight test</li> <li>• Continued development of Software Build 4.2</li> <li>• Continued development and design of tactical Prime Power Unit (PPU)</li> <li>• Tracked targets of opportunity and dedicated AN/TPY-2 Radar risk reduction missions</li> <li>• Supported flight testing at WSMR</li> <li>• Completed AN/TPY-2 Radar Block Process Validation</li> <li>• Continued the fabrication and assembly of AN/TPY-2 Radar #2</li> <li>• Participated in Radar Data Collection (RDC) missions at WSMR</li> </ul> <p><b>FY07 Planned Program:</b> RDT&amp;E Articles: Deliver 1 AN/TPY-2 Radar</p> <ul style="list-style-type: none"> <li>• Deliver and complete integration of AN/TPY-2 Radar #2 at WSMR</li> <li>• Conducted Soldier Tactical move of AN/TPY-2 Radar #1 to Pacific Missile Range Facility (PMRF)</li> <li>• Support flight testing at PMRF</li> <li>• Continue development and conduct Design Readiness Review for PPU</li> <li>• Deliver Formal Release of Software Build 4.2</li> <li>• Initiate manufacture of AN/TPY-2 Radar PPU</li> <li>• Participate in RDC missions at PMRF</li> <li>• Maintain Formal Release of Software Build 4.1</li> </ul>				

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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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**FY08 Planned Program:**

- Integrate Formal Release of Software Build 4.2 in the System Integration Lab (SIL)
- Deliver first PPU for Government Block Qualification Test (BQT)
- Initiate Government BQT
- Support flight testing
- Continue to maintain Formal Release of Software Build 4.2

**FY09 Planned Program:**

- Update Software Build 4.2
- Integrate update of Software Build 4.2 in the SIL for flight test
- Complete Government BQT
- Support flight testing
- Continue to maintain Formal Release of Software Build 4.2
- Complete and deliver PPU #2

	FY 2006	FY 2007	FY 2008	FY 2009
Launcher	20,231	12,407	6,909	7,411
RDT&E Articles (Quantity)	0	1	1	0

The THAAD Launcher consists of a U.S. Army M1120 Heavy Expanded Mobility Tactical Truck-Load Handling System variant that transports an integrated missile round pallet and supports and secures eight ready-to-launch interceptors.

**FY06 Accomplishments:**

- Initiated the development of Software Build 4
- Continued System Integration Lab (SIL) Hardware-in-loop (HWIL) integration activities of hardware and software in preparation for flight test
- Supported flight testing at White Sands Missile Range (WSMR)
- Continued development of Software Build 3

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**FY07 Planned Program:**

RDT&E Articles: Delivered 1 Launcher

- Support flight testing at WSMR and Pacific Missile Range Facility (PMRF)
- Complete Formal Release of Launcher Software Build 3
- Continue development and conduct Design Readiness Review for Software Build 4
- Continue SIL HWIL integration activities of hardware and software in preparation for flight test
- Conducted Soldier Tactical move of Launcher to PMRF
- Initiate buy of 1 Launcher

**FY08 Planned Program:**

RDT&E Articles: Delivered 1 Launcher

- Support flight testing at PMRF
- Continue SIL HWIL integration activities of hardware and software in preparation for flight test
- Complete Launcher Block Process Validation
- Initiate Launcher Government BQT
- Complete Formal Release of Software Build 4 and deliver to the SIL for flight test

**FY09 Planned Program:**

- Continue SIL HWIL integration activities of hardware and software in preparation for flight test
- Support flight testing at PMRF
- Continue to maintain Formal Release of Software Build 4
- Complete Government BQT

	FY 2006	FY 2007	FY 2008	FY 2009
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)	115,016	79,758	27,131	14,115
RDT&E Articles (Quantity)	0	2	3	0

The THAAD Fire Control and Communication (TFCC) is composed of the Tactical Operations Station, the Launch Control Station, and the Station Support Group. These three components together are called the Tactical Station Group (TSG). A TFCC includes two TSGs. The TFCC provides the planning, control, coordination, execution, and communications necessary to fulfill the THAAD mission in a coherent and fully integrated fashion. It

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<p>is interoperable with external air and interceptor defense and intelligence systems and agencies integrated into the Ballistic Missile Defense System (BMDS).</p> <p>FY06 Accomplishments:</p> <ul style="list-style-type: none"><li>• Supported flight testing at White Sands Missile Range (WSMR)</li><li>• Continued System Integration Lab (SIL) Hardware-in-loop (HWIL) integration activities of hardware and software in preparation for flight test</li><li>• Continued to maintain Formal Release of Software Build 4</li><li>• Completed Detailed Design and Initiated Development of Software Build 5</li><li>• Initiated Link 16C Communication Enhancements for Software Build 5</li><li>• Participated in BMDS integrated flight test with Patriot at WSMR</li><li>• Maintained Software Development and Testing Environment and Tools</li><li>• Completed hardware contractor Developmental Verification Testing (DVT)</li><li>• Initiated development of upgrades to vehicles and shelters to address up armor requirements</li><li>• Initiated buy of 4 TSGs</li></ul> <p>FY07 Planned Program:</p> <p>RDT&amp;E Articles: Deliver 2 TFCC TSGs</p> <ul style="list-style-type: none"><li>• Conducted Soldier Tactical move of TFCC to Pacific Missile Range Facility (PMRF)</li><li>• Support flight testing at PMRF</li><li>• Continue development of Software Build 5</li><li>• Continue Formal Release of Software Build 4</li><li>• Initiate rehosting of Software Build 5 on upgraded processors</li><li>• Continue development upgrades to vehicles and shelters</li><li>• Conducted Design Readiness Review (DRR) of development upgrades to vehicles and shelters</li><li>• Participate in BMDS Integration with Aegis at PMRF</li><li>• Continue Link 16C Communication Enhancements Software Build 5</li></ul> <p>FY08 Planned Program:</p> <p>RDT&amp;E Articles: Deliver 3 TFCC TSGs</p>		

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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- Continued SIL HWIL integration activities of hardware and software in preparation for flight testing
- Support flight testing at PMRF
- Deliver Formal Release of Software Build 5
- Complete rehosting of Software Build 5 on upgraded processors to address obsolescence
- Complete Link 16C Communication Enhancements for Software Build 5
- Refurbish 1 TSG
- Initiate Government Block Qualification Test (BQT)

**FY09 Planned Program:**

- Continued SIL HWIL integration activities of hardware and software in preparation for flight test
- Support flight testing at PMRF
- Maintain Formal Release of Software Build 5
- Complete Government BQT
- Refurbish 2 TSGs

	FY 2006	FY 2007	FY 2008	FY 2009
Integrated Logistics Support (ILS)	38,081	38,098	52,661	49,870
RDT&E Articles (Quantity)	0	0	0	0

Provides each THAAD component with all aspects of logistics support for all blocks of the program. Responsible for transportability of all THAAD system equipment and for ensuring the required Government Furnished Equipment (GFE) is available as required by contract. Additionally, works with the user in developing all aspects of training for the components and has a key role in the transition effort of the THAAD System to the Army.

**FY06 Accomplishments:**

- Supported flight testing at White Sands Missile Range (WSMR)
- Continued to conduct Soldier-in-the-Loop Training and training course development for soldier participation in flight test program
- Continued development of the Battery Support Center (BSC) and Interim Contractor Support System (ICSS)
- Continued to procure GFE to support program requirements
- Continued to process Basis of Issue Plan /Qualitative Quantitative Personnel Requirements Information (BOIP/QQPR) and Manprint Management Plan

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<ul style="list-style-type: none"><li>• Initiated development of Tactical Active Leak Sensor</li><li>• Continued updating Supportability Strategy, Manpower Estimate Report (MER) and Emergency Activation Plan (EAP)</li><li>• Continued development of Interactive Electronic Training Manuals (IETMs)</li></ul> <p>FY07 Planned Program:</p> <ul style="list-style-type: none"><li>• Continue to support flight testing at WSMR and Pacific Missile Range Facility (PMRF)</li><li>• Develop and update Performance Based Logistics (PBL) Strategy and Draft Material Fielding Plan</li><li>• Continue to procure GFE to support program requirements</li><li>• Continue development of BSC and ICSS</li><li>• Conduct Design Readiness Review (DRR) for BSC and ICSS</li><li>• Publish the revised New Equipment Training Plan</li><li>• Continue development of Active Leak Sensor</li><li>• Continue Supportability Strategy/MER/EAP</li><li>• Continue development of IETMs</li></ul> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"><li>• Continue to support flight testing at PMRF</li><li>• Support government Block Qualification Test (BQT)</li><li>• Publish Modified Table of Organization and Equipment</li><li>• Deliver Tactical Active Leak Sensor</li><li>• Deliver BSC and ICSS</li><li>• Complete IETMs</li><li>• Continue updating the Supportability Strategy/MER/EAP</li><li>• Continue to procure GFE to support program requirements</li></ul> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"><li>• Support flight tests at PMRF</li><li>• Complete support of Government BQT</li><li>• Conduct Logistics and Supply Support Demonstrations</li></ul>		



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<ul style="list-style-type: none"> <li>• Publish Demilitarization/Disposal Plan</li> <li>• Continue to procure GFE for program requirements</li> <li>• Continue updating THAAD Supportability Strategy/MER/EAP</li> </ul>				
	FY 2006	FY 2007	FY 2008	FY 2009
System Test	87,466	156,738	219,925	233,486
RDT&E Articles (Quantity)	0	0	0	0
<p>The THAAD System Tests are responsible for developing and executing all aspects of the THAAD program flight test objectives, ballistic interceptor target solutions, Live Fire Test and Evaluation (LFT&amp;E) program, system flight test execution, government ground testing, range facility preparations, documentation requirements, data analysis and reporting.</p> <p><b>FY06 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• Conducted flight testing at White Sands Missile Range (WSMR)</li> <li>• Continued LFT&amp;E program and conducted Sled tests at Holloman Air Force Base (AFB), NM</li> <li>• Completed Capability Assessment Plan (CAP)</li> <li>• Participated in Targets planning and Target requirements for flight test program</li> <li>• Conducted Ballistic Missile Defense System (BMDS) integrated flight test at WSMR with the Patriot Missile System</li> <li>• Conducted Radar Data Collection (RDC) missions at WSMR</li> <li>• Conducted Risk Reduction Flight (RRF) at Pacific Missile Range Facility (PMRF)</li> <li>• Continued assembly and integration of Targets</li> </ul> <p><b>FY07 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• Continue test planning and range operations for flight testing</li> <li>• Complete flight testing at WSMR and conduct flight testing at PMRF</li> <li>• Participate in Targets planning and Target requirements for flight test program</li> <li>• Conduct BMDS integrated tests at PMRF with Aegis</li> <li>• Initiated E3 interceptor and launcher Design Verification Test (DVT)/Block Qualification Test (BQT)</li> <li>• Initiated support of Target Launch Platform in support of flight tests</li> <li>• Initiated planning for element level Government BQT</li> </ul>				

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<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>		
<ul style="list-style-type: none"> <li>• Continue LFT&amp;E program and conduct Sled tests at Holloman AFB, NM</li> <li>• Continue to conduct RDC missions at PMRF</li> <li>• Continue assembly and integration of Targets</li> </ul> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> <li>• Continue test planning and range operations for flight testing</li> <li>• Conduct flight testing at PMRF</li> <li>• Continue support of Target Launch Platform in support of flight testing</li> <li>• Participate in Targets planning and Target requirements for flight test program</li> <li>• Conduct Government BQT</li> <li>• Continue LFT&amp;E Program and Light Gas Gun tests</li> <li>• Continue assembly and integration of Targets</li> </ul> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> <li>• Continue test planning and range operations for flight testing</li> <li>• Conduct flight testing at PMRF</li> <li>• Complete Government BQT</li> <li>• Participate in Targets planning and Target requirements for flight test program</li> <li>• Continue LFT&amp;E program and conduct Light Gas Gun test</li> <li>• Support Insensitive Munitions/Hazardous Classification (IM/HC) approvals</li> <li>• Conduct System Logistics Demonstrations</li> <li>• Integrate Sim-Over-Live System Driver (SOLD) into flight test program</li> <li>• Conduct Developmental Test/Operational Test (DT/OT)</li> <li>• Continue assembly and integration of Targets</li> </ul>				
	FY 2006	FY 2007	FY 2008	FY 2009
Weapon Sys Engr & Integ Team	68,521	70,498	61,046	53,174
RDT&E Articles (Quantity)	0	0	0	0

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<p>Responsible for all engineering efforts required to translate approved Ballistic Missile Defense System (BMDS) capabilities and requirements into operationally suitable THAAD capability blocks. Coordinate and conduct requirements analysis, system integration and verification, software engineering to include independent verification and validation, configuration management, and BMDS integration for each THAAD component by working through the Integrated Process Team (IPT) process on a balanced contractor-government team. Additionally responsible for all aspects of risk management and security for the THAAD program.</p> <p>FY06 Accomplishments:</p> <ul style="list-style-type: none"><li>• Supported flight testing at White Sands Missile Range(WSMR) and Pacific Missile Range Facility (PMRF)</li><li>• Continued supporting pre-flight testing in the System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) facility</li><li>• Continued supporting SIL and flight test data analysis</li><li>• Continued validation of the end-to-end digital simulation using flight test data</li><li>• Continued participating in wargames, exercises and interoperability demonstrations</li><li>• Performed System Analysis in support of flight testing</li><li>• Performed Parametric Performance Assessments</li><li>• Updated assessment of Element capability using comprehensive, end-to-end digital simulation</li><li>• Supported flight test mission planning</li><li>• Planned integration of THAAD into BMDS Test Bed</li></ul> <p>FY07 Planned Program:</p> <ul style="list-style-type: none"><li>• Support flight testing at WSMR and PMRF</li><li>• Continue supporting pre-flight testing in the SIL HWIL facility</li><li>• Continue System Analysis in support of flight testing</li><li>• Continue validation of the end-to-end digital simulation using flight test data</li><li>• Initiate element characterization analysis</li><li>• Continue planning the integration and implementation of THAAD and its components in the BMDS Test Bed</li><li>• Perform SIL HWIL integration of Formal Release of Interceptor Software Build 7, Launcher Software Build 4, Fire Control Software Build 5 and THAAD Radar Software Build 4 for integrated flight test</li><li>• Continue participating in wargames, exercises and interoperability demonstrations</li></ul> <p>FY 08 Planned Program:</p>		

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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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- Support flight testing at PMRF
- Continue supporting pre-flight testing in the SIL HWIL facility
- Continue System Analysis in support of flight tests
- Complete validation of the end-to-end digital simulation using flight test data
- Initiate Element Verification analysis
- Continue planning the integration and implementation of THAAD and its components in the BMDS Test Bed
- Continue participating in wargames, exercises and interoperability demonstrations

**FY 09 Planned Program:**

- Support flight testing at PMRF
- Continue supporting pre-flight testing in the SIL HWIL facility
- Complete System Analysis in support of flight testing
- Complete validation of the end-to-end digital simulation using flight test data
- Complete Element Verification analysis
- Complete integration and implementation of THAAD and its components in the BMDS Test Bed
- Continued participating in wargames, exercises and interoperability demonstrations

	FY 2006	FY 2007	FY 2008	FY 2009
Fire Unit #1	0	129,128	183,570	80,251
RDT&E Articles (Quantity)	0	0	0	17

Fire Unit #1 will include 24 Interceptors, 3 Launchers, 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar (provided by development contract), 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) (provided by development contract), the required Peculiar and Common Support Equipment, and 2 Interceptors for flight test (provided by development contract). The Fire Unit will be fielded in FY09 and, following operational testing, will be transitioned to the U.S. Army.

**FY07 Planned Program:**

- Initiate the fabrication and assembly of component hardware
- Initiate redesign of assemblies with obsolescence or pure tin hardware
- Initiate the procurement of Government Furnished Equipment (GFE) to support the Fire Unit

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<ul style="list-style-type: none"><li>• Initiate and complete the Integrated Baseline Review (IBR)</li><li>• Initiate buy of 24 interceptors, and 3 launchers for Fire Unit #1</li><li>• Initiate buy of 2 interceptors for development tests</li><li>• Received 1 AN/TPY-2 Radar (provided by development contract)</li></ul> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"><li>• Continue the fabrication and assembly of Interceptor components and Initial Spares</li><li>• Complete the fabrication and assembly of Launcher components and initiate the final assembly of Launchers</li><li>• Complete the fabrication and assembly of Interceptor components and initiate the final assembly of Interceptors for development test</li><li>• Initiate the fabrication and assembly of Missile Round Trainers</li><li>• Continue the procurement of GFE to support Fire Unit</li><li>• Initiate the procurement of Common Support Equipment (CSE)</li><li>• Complete the procurement of Initial Spares</li><li>• Initiate preparation for Ground Test Element Integration and Checkout (EICO)</li><li>• Convert System Integration Laboratory (SIL) to Fire Unit configuration</li><li>• Complete redesign of assemblies with obsolescence or pure tin hardware</li><li>• Initiate requalification testing of redesign hardware</li><li>• Received 2 TFCC TSGs (provided under development contract)</li></ul> <p>FY09 Planned Program:</p> <p>RDT&amp;E Articles: Deliver 2 Interceptors for Development Tests, 12 Interceptors for Fire Unit and 3 Launchers</p> <ul style="list-style-type: none"><li>• Complete the final assembly of Launchers</li><li>• Complete the final assembly of Interceptors for development test</li><li>• Complete the fabrication and assembly of Missile Round Trainers</li><li>• Complete the procurement of GFE</li><li>• Complete the procurement of CSE</li><li>• Initiate SIL Testing</li><li>• Begin Limited User Testing (LUT)</li><li>• Complete requalification testing of redesign hardware</li></ul>		

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<ul style="list-style-type: none"> <li>Conduct Ground Test Element Integration and Checkout (EICO)</li> </ul>				
	FY 2006	FY 2007	FY 2008	FY 2009
Field Support and Contract Logistics Support (CLS)	0	0	1,148	21,847
RDT&E Articles (Quantity)	0	0	0	0
<p>Will provide the THAAD Fire Units with the logistics support resources required to field, operate and maintain the THAAD weapon system. The contractor technicians will be responsible for field and sustainment maintenance including the repair and supply chain management of the required spares and repair parts. Also, will provide engineering support services, software development and maintenance support, and facilitate transition of the THAAD system to the U.S. Army.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> <li>Provide Contractor Logistics Support (CLS) to the Fire Units</li> <li>Conduct training, update training material, and develop and maintain training devices</li> <li>Provide Interactive Electronic Technical Manuals (IETMs) and Technical Data Updates</li> <li>Provide Interim Automated Information System (AIS) System for Maintenance and Supply Chain Management</li> <li>Perform Logistic and Reliability, Availability, and Maintainability (RAM)</li> <li>Perform Systems Engineering</li> <li>Begin procurement of Replenishment Spares</li> </ul> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> <li>Continue to provide CLS support to the Fire Units</li> <li>Continue to conduct training, update training material, and develop and maintain training devices</li> <li>Continue to provide IETMs and technical data updates</li> <li>Continue to provide interim AIS System for Maintenance and Supply Chain Management</li> <li>Continue to perform Logistics and RAM Analysis</li> <li>Continue to perform Systems Engineering</li> <li>Continue procurement of Replenishment Spares</li> </ul>				

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	FY 2006	FY 2007	FY 2008	FY 2009
Program Management	48,646	34,570	35,607	38,388
RDT&E Articles (Quantity)	0	0	0	0
<p>Program Management provides support functions across the program such as strategic planning, program integration, cost estimating, contracting, and financial management to include preparation of financial statements, reimbursement of financial services provided by Defense Finance Accounting Service (DFAS), internal review and audit, earned-value management, and program assessments.</p> <p>FY06 Accomplishments:</p> <ul style="list-style-type: none"> <li>• Supported flight test program at White Sands Missile Range (WSMR)</li> <li>• Provided management, leadership, and planning for all Block 2008 activities</li> <li>• Provided salaries, travel, training, supplies, rental and project-wide support</li> <li>• Provided project-wide programmatic support</li> </ul> <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> <li>• Continue support of flight test program at WSMR and Pacific Missile Range Facility (PMRF)</li> <li>• Provide management, leadership, and planning for all Block 2008 activities</li> <li>• Provide salaries, travel, training, supplies, rental and project-wide support</li> <li>• Continue to provide project-wide programmatic support</li> </ul> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> <li>• Continue support of flight test program at PMRF</li> <li>• Provide management, leadership, and planning for all Block 2008 activities</li> <li>• Provide salaries, travel, training, supplies, and project-wide support</li> <li>• Continue to provide project-wide programmatic support</li> </ul> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> <li>• Continue support of flight test program at PMRF</li> <li>• Provide management, leadership, and planning for all Block 2008 activities</li> <li>• Provide salaries, travel, training, supplies, rental and project-wide support</li> </ul>				

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- Continue to provide project-wide programmatic support

**C. Other Program Funding Summary**

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947



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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
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><u>D. Acquisition Strategy</u></b> THAAD follows the capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The THAAD Block 2008 development program is already on contract with Lockheed Martin Space Systems Company (LMSSC), Sunnyvale, CA. The Cost Plus Award Fee (CPAF)/ Cost Plus Incentive Fee (CPIF) contract was awarded August 4, 2000. The Fire Unit #1 contract was awarded on 22 Dec 06 and consists of a Sole Source, CPAF/CPIF contract to procure Interceptors, Launchers, THAAD Fire Control and Communication and Peculiar Support Equipment hardware. In addition, there will be a Sole Source Indefinite Delivery, Indefinite Quantity (ID/IQ) Delivery Order Contract to LMSSC for Contractor Logistics Support for the Fire Unit targeted to be awarded in FY08. Block 2008 development activities, as well as the acquisition of the Fire Unit, will provide a significant capability to protect deployed U.S. and allied forces, specified civilian population centers, or selected sites within the U.S.		

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2007		
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>I. Product Development Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Interceptor</b>										
Prime Contract	SS/CPIF	LMSSC/ CA, TX, AL, MA, NH, IL, FL & MD	1,343,005	275,737	1/2Q	59,164	1/2Q	36,950	1/2Q	1,714,856
<b>Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar</b>										
Prime Contract	SS/CPIF	LMSSC and Raytheon/ Huntsville, AL, Bedford, MA, & Texas	563,345	104,449	1/2Q	66,573	1/2Q	20,749	1/2Q	755,116
<b>Launcher</b>										
Prime Contract	SS/CPIF	LMSSC/ Huntsville, AL & Lufkin, TX	78,707	6,532	1/2Q	3,580	1/2Q	4,529	1/2Q	93,348
<b>THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)</b>										
Prime Contract	SS/CPIF	LMSSC and Raytheon/ Huntsville, AL	237,039	67,155	1/2Q	23,709	1/2Q	11,569	1/2Q	339,472
<b>Integrated Logistics Support (ILS)</b>										
Prime Contract	SS/CPIF	LMSSC/ Huntsville, AL	61,025	14,438	1/2Q	23,430	1/2Q	22,088	1/2Q	120,981
<b>System Test</b>										

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
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 2007 Cost	FY 2007 Award/Oblg Date	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA; Huntsville, AL; NM & HI	135,067	53,725	1/2Q	90,059	1/2Q	91,064	1/2Q	369,915
<b>Weapon Sys Engr &amp; Integ Team</b>										
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA & Huntsville, AL	155,416	32,940	1/2Q	24,956	1/2Q	24,448	1/2Q	237,760
<b>Fire Unit #1</b>										
Prime Contract	SS/CPIF	LMSSC & Raytheon/ CA, TX, AL, MA, NH, IL, FL & MD	0	121,018	1/2Q	173,870	1/2Q	80,251	1/2Q	375,139
<b>Field Support and Contract Logistics Support (CLS)</b>										
			0	0	N/A	1,148	1/2Q	21,420	1/2Q	22,568
<b>Program Management</b>										
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA & Huntsville, AL	112,562	13,659	1/2Q	9,385	1/2Q	10,757	1/2Q	146,363
Subtotal Product Development			2,686,166	689,653		475,874		323,825		4,175,518
<b>Remarks</b>										

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
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>II. Support Costs Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Interceptor</b>										
SETA	C	Multiple to include BAE, TSI & L3/ Huntsville, AL & Salt Lake City, UT	29,597	6,175	1/2Q	5,651	1/2Q	4,043	1/2Q	45,466
OGA	MIPR	Multiple to include RDEC & SMDC/ Huntsville, AL	31,115	3,692	1/2Q	5,427	1/2Q	6,779	1/2Q	47,013
MDA Program Support	C	MDA/ Arlington, VA	7,888	1,413	1/2Q	2,175	1/2Q	1,979	1/2Q	13,455
<b>Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar</b>										
SETA	C	Multiple to include Dynetics & GA Tech/ Huntsville, AL and GA	8,364	2,744	1/2Q	2,511	1/2Q	1,797	1/2Q	15,416
OGA	MIPR	Multiple to include CECOM, RDEC & SMDC/ Ft Monmouth NJ and Huntsville, AL	12,057	1,736	1/2Q	2,581	1/2Q	3,105	1/2Q	19,479
MDA Program Support	C	MDA/ Arlington, VA	3,175	641	4Q	1,047	1/2Q	1,019	1/2Q	5,882

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2007		
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 2007 Cost	FY 2007 Award/Oblg Date	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	636	2Q	0	N/A	0	N/A	636
<b>Launcher</b>										
SETA	C	Teledyne Solutions/ Huntsville, AL	2,963	848	1/2Q	776	1/2Q	555	1/2Q	5,142
OGA	MIPR	RDEC & SMDC/ Huntsville, AL	3,750	685	1/2Q	1,322	1/2Q	1,831	1/2Q	7,588
MDA Program Support	C	MDA/ Arlington, VA	477	220	1/2Q	431	1/2Q	496	1/2Q	1,624
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	4,122	2Q	800	1Q	0	N/A	4,922
<b>THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)</b>										
SETA	C	Multiple to include Dynetics, DCD, & Davidson Tech/ Silver Spring, MD & Huntsville, AL	4,465	480	1/2Q	439	1/2Q	314	1/2Q	5,698

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2007		
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 2007 Cost	FY 2007 Award/Oblg Date	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
OGA	MIPR	Multiple to include NRDEC, RDEC & SMDC/ Natick MA & Huntsville, AL	12,082	859	1/2Q	1,531	1/2Q	1,742	1/2Q	16,214
MDA Program Support	C	MDA/ Arlington, VA	1,315	192	1/2Q	405	N/A	490	1/4Q	2,402
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	11,072	2Q	1,047	1Q	0	N/A	12,119
<b>Integrated Logistics Support (ILS)</b>										
SETA	C	Multiple to include Dynetics, TSA & BAE/Huntsville, AL & Rockville, MD	7,697	4,076	1/2Q	4,230	1/2Q	2,669	1/2Q	18,672
OGA	MIPR	Multiple to include IMMC & USAADASCH/ Huntsville, AL & Ft. Bliss	37,638	16,620	1/2Q	19,930	1/2Q	20,160	1/2Q	94,348
MDA Program Support	C	MDA/ Arlington, VA	285	2,964	1/2Q	5,071	N/A	4,953	1/2Q	13,273
<b>System Test</b>										
SETA	C	Multiple to include Dynetics, L3 & TSI/Huntsville, AL	5,590	16,214	1/2Q	17,219	1/2Q	10,127	1/2Q	49,150

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/Oblg Date	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
OGA	MIPR	Multiple to include WSMR, PMRF, ATEC, RDEC & SMDC/ NM, HI, VA, & Huntsville, AL	47,639	54,390	1/2Q	53,826	1/2Q	71,045	1/2Q	226,900
MDA Program Support	C	MDA/ Arlington, VA	742	10,110	1/2Q	14,610	1/2Q	16,871	1/2Q	42,333
<b>Weapon Sys Engr &amp; Integ Team</b>										
SETA	C	Multiple to include Dynetics, TSA and L3/Huntsville, AL & Salt Lake City, UT	41,748	25,817	1/2Q	23,623	1/2Q	16,905	1/2Q	108,093
OGA	MIPR	Multiple to include RDEC & SMDC/ Huntsville, AL	54,008	4,846	1/2Q	6,311	1/2Q	6,878	1/2Q	72,043
MDA Program Support	C	MDA/ Arlington, VA	781	4,391	1/2Q	6,156	1/2Q	4,943	1/2Q	16,271
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	2,504	2Q	0	N/A	0	N/A	2,504
<b>Fire Unit #1</b>										

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
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 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	8,110	2Q	0	N/A	0	N/A	8,110
CSE	MIPR	Multiple to include CECOM, TACOM, & GSA/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	0	N/A	9,700	1/2Q	0	N/A	9,700
<b>Field Support and Contract Logistics Support (CLS)</b>										
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC	0	0	N/A	0	N/A	427	N/A	427
<b>Program Management</b>										
SETA	C	Multiple to include Dynetics, BAE, & L3/Huntsville, AL Rockville, MD & Salt Lake City, UT	31,617	5,933	1/2Q	5,929	1/2Q	6,885	1/2Q	50,364
MDA Support	C	MDA/ Arlington, VA	0	2,619	1/2Q	4,473	N/A	4,755	1/2Q	11,847
<b>Subtotal Support Costs</b>			344,993	194,109		197,221		190,768		927,091
<b>Remarks</b>										



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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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<b>III. Test and Evaluation Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>System Test</b>										
Targets			0	22,299	1/2Q	44,211	1/2Q	44,379	1/2Q	110,889
<b>Subtotal Test and Evaluation</b>			0	22,299		44,211		44,379		110,889

**Remarks**

<b>IV. Management Services Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Program Management</b>										
Internal Operating Budget	MIPR	THAAD/ Huntsville, AL	55,099	12,359	1/2Q	15,820	1/2Q	15,991	1/2Q	99,269
<b>Subtotal Management Services</b>			55,099	12,359		15,820		15,991		99,269

**Remarks**

<b>Project Total Cost</b>			3,086,258	918,420		733,126		574,963		5,312,767
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**Remarks**

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013										
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4							
<b>Testing Milestones</b>																																							
Conduct FTT-01	▲																																						
Conduct FTT-02			▲																																				
Conduct FTT-03				▲																																			
Conduct FTT-04				▲																																			
Conduct FTT-05					△	—	△																																
Conduct FTT-06					△																																		
Conduct FTT-07						△	—	△																															
Conduct FTT-08								△	—	△																													
Conduct FTT-09									△	—	△																												
Conduct FTT-10												△	—	△																									
Conduct FTT-11													△	—	△																								
Conduct FTT-12														△	—	△																							
Conduct FTT-13															△	—	△																						

Legend			
▲	Significant Event (complete)	△	Significant Event (planned)
★	Milestone Decision (complete)	☆	Milestone Decision (planned)
◆	Element Test (complete)	◇	Element Test (planned)
▼	System Level Test (complete)	▽	System Level Test (planned)
▲—▲	Complete Activity	△—△	Planned Activity

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>		Date <b>February 2007</b>																																		
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)												<b>R-1 NOMENCLATURE</b> 0603881C Ballistic Missile Defense Terminal Defense Segment																								
Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Testing Milestones</b>																																				
Conduct FTT-14																																				
<b>BLOCK 2008</b>																																				
FTT-01 Interceptor Delivered to WSMR																																				
Pacific Missile Range Facility Activation																																				
FTT-02 Interceptor Delivered to WSMR																																				
FTT-03 Interceptor Delivered to WSMR																																				
Soldier-in-the-Loop Training Course 2																																				
FTT-04 Interceptor Delivered to WSMR																																				
FTT-06 Interceptor Delivered to Range																																				
FTT-05 Interceptor Delivered to WSMR																																				
AN/TPY-2 Radar #2 Delivered to WSMR for Integ																																				
AN/TPY-2 Radar #2 Integration Complete at WSMR																																				
FTT-07 Interceptor Delivered to Range																																				
														<b>Legend</b>																						
 Significant Event (complete)							 Milestone Decision (complete)							 Significant Event (planned)							 Milestone Decision (planned)															
 Element Test (complete)							 System Level Test (complete)							 Element Test (planned)							 System Level Test (planned)															
 Complete Activity														 Planned Activity																						

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>BLOCK 2008</b>																																				
FTT-08 Interceptor Delivered to Range								△																												
FTT-09 Interceptors (2) Delivered to Range								△-△																												
Interceptor S/W Build 7.0 Formal Rel Integ at SIL								△																												
Insensitive Munitions/Hazards Testing								△	-----	△																										
AN/TPY-2 Radar B4.2 S/W Formal Rel Integ at SIL								△																												
Fire Control and Comm B5 S/W Formal Rel at SIL								△																												
AN/TPY-2 Radar #2 Avail for Block Qual Test								△																												
Deliver Prime Power Unit (PPU) #1								△																												
AN/TPY-2 Radar #2 E3 Testing Complete								△																												
FTT-10 Interceptor Delivered to Range								△																												
Launcher Build 4 S/W Formal Release Integ at SIL								△	-----	△																										
FTT-11 Interceptors(2) Delivered to Range								△																												
FTT-12 Interceptor Delivered to Range								△																												

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	★	Milestone Decision (planned)
◆	Element Test (complete)	◆	Element Test (planned)
◊	System Level Test (complete)	◊	System Level Test (planned)
▲-----▲	Complete Activity	▲-----▲	Planned Activity

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>BLOCK 2008</b>																																
FTT-13 Interceptor Delivered to Range												△																				
FTT-14 Interceptor Delivered to Range												△																				
AN/TPY-2 Radar B4.2 Formal Update Rel													△	—	△																	
AN/TPY-2 Radar Prime Power Unit #2 Delivered														△																		
Element Logistics Demonstrations																																
Element Weapon System Verification																																
<b>Contractual Activities &amp; Events</b>																																
Fire Unit #1 and #2 Contract Award								▲																								
Field Support and CLS Contract Award												△																				
<b>Deliveries</b>																																
Fire Unit #1																																

Legend			
▲	Significant Event (complete)	△	Significant Event (planned)
★	Milestone Decision (complete)	☆	Milestone Decision (planned)
◆	Element Test (complete)	◇	Element Test (planned)
▽	System Level Test (complete)	▽	System Level Test (planned)
▲—▲	Complete Activity	△—△	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>Testing Milestones</b>								
Conduct FTT-01	1Q							
Conduct FTT-02	3Q							
Conduct FTT-03	4Q							
Conduct FTT-04	4Q							
Conduct FTT-05		2Q-4Q						
Conduct FTT-06		2Q						
Conduct FTT-07		3Q-4Q						
Conduct FTT-08		4Q	1Q					
Conduct FTT-09			2Q-3Q					
Conduct FTT-10			4Q	1Q				
Conduct FTT-11				1Q-2Q				
Conduct FTT-12				2Q-3Q				
Conduct FTT-13				3Q-4Q				
Conduct FTT-14					1Q-2Q			
<b>BLOCK 2008</b>								
FTT-01 Interceptor Delivered to WSMR	1Q							
Pacific Missile Range Facility Activation	2Q							
FTT-02 Interceptor S/W Engr Rel Integrated at SIL	2Q							
FTT-02 Interceptor Delivered to WSMR	3Q							
FTT-03 Interceptor Delivered to WSMR	3Q							
Soldier-in-the-Loop Training Course 2	3Q							
FTT-04 Interceptor Delivered to WSMR	4Q							
FTT-06 Interceptor Delivered to Range		1Q						
FTT-05 Interceptor Delivered to WSMR		2Q-3Q						
AN/TPY-2 Radar #2 Delivered to WSMR for Integ		2Q						
AN/TPY-2 Radar #2 Integration Complete at WSMR		2Q						
FTT-07 Interceptor Delivered to Range		2Q						
Interceptor S/W B7.0 Engr Rel Integ at SIL		2Q						
FTT-08 Interceptor Delivered to Range		3Q						
FTT-09 Interceptors (2) Delivered to Range		3Q-4Q						

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Interceptor S/W Build 7.0 Formal Rel Integ at SIL		4Q						
Interceptor Block Qualification Test		1Q-4Q	1Q-4Q					
AN/TPY-2 Radar B4.2.1 S/W Engr Rel Integ at SIL		4Q						
Insensitive Munitions/Hazards Testing		4Q	1Q-4Q	1Q				
AN/TPY-2 Radar B4.2 S/W Formal Rel Integ at SIL			1Q					
Fire Control and Comm B5 S/W Formal Rel at SIL			1Q					
AN/TPY-2 Radar #2 Avail for Block Qual Test			1Q					
Deliver Prime Power Unit (PPU) #1			1Q					
AN/TPY-2 Radar #2 E3 Testing Complete			1Q					
FTT-10 Interceptor Delivered to Range			1Q					
Launcher Build 4 S/W Formal Release Integ at SIL			1Q-4Q					
FTT-11 Interceptors(2) Delivered to Range			2Q					
FTT-12 Interceptor Delivered to Range			2Q					
FTT-13 Interceptor Delivered to Range			3Q					
FTT-14 Interceptor Delivered to Range			3Q					
AN/TPY-2 Block Qualification Test (BQT)			2Q-4Q	1Q-4Q				
Fire Control and Comm Block Qual Test (BQT)			3Q-4Q	1Q-4Q				
Launcher Block Qualification Test (BQT)			3Q-4Q	1Q-4Q				
AN/TPY-2 Radar B4.2 Formal Update Rel			4Q	1Q-3Q				
AN/TPY-2 Radar Prime Power Unit #2 Delivered				1Q				
Element Logistics Demonstrations				2Q-4Q				
Element Weapon System Verification				3Q				
<b>Contractual Activities &amp; Events</b>								
Fire Unit #1 and #2 Contract Award		1Q						
Field Support and CLS Contract Award			1Q					
<b>Deliveries</b>								
Fire Unit #1				2Q-4Q	1Q-2Q			

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2007</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>				
COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0007 Terminal High Altitude Area Defense (THAAD) Block 2010	0	20,000	125,151	254,580	76,555	14,612	16,305	15,721
RDT&E Articles Qty	0	0	0	4	25	0	0	0
<i>Note: RDT&amp;E Articles for Fire Unit: FY07 - Buy 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar. FY08 - Buy 24 Full-up Interceptors, 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) and 2 Launchers for Fire Unit #2. FY09 - Deliver 2 TFCC TSGs and 2 Launchers for Fire Unit #2. FY10 - Deliver 24 Full-up Interceptors and 1 AN/TPY-2 Radar for Fire Unit #2.</i>								
<b><u>A. Mission Description and Budget Item Justification</u></b>								
<p>The Terminal 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 Block 2010 THAAD 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. Five major components (Interceptors, Launchers, Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar, THAAD Fire Control and Communication (TFCC), and THAAD-Peculiar Support Equipment) will be integrated into the THAAD element and BMDS.</p> <p>Block 2010: Block 2010 provides continued manufacturing of Fire Unit hardware. In Block 2010, the THAAD Fire Unit #2 consisting of 24 Interceptors, 3 Launchers, 1 AN/TPY-2 Radar and 1 TFCC will be delivered. In addition, Block 2010 continues the field support and contractor logistics support for fielded Fire Unit assets.</p>								
<b><u>B. Accomplishments/Planned Program</u></b>								
	FY 2006	FY 2007	FY 2008	FY 2009				
Fire Unit #2	0	20,000	125,151	254,580				
RDT&E Articles (Quantity)	0	0	0	4				
<p>Fire Unit #2 will include 24 Interceptors, 2 Launchers, 1 Refurbished Launcher, 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar, 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs), and the required Peculiar and Common Support Equipment. The Fire Unit will be fielded in FY10 and, following operational testing, will be transitioned to the U.S. Army.</p>								



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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date <b>February 2007</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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**FY07 Planned Program:**

- Initiate buy of 1 AN/TYP-2 Radar

**FY08 Planned Program:**

- Initiate the fabrication and assembly of component hardware
- Initiate the fabrication and assembly of initial spares
- Initiate the procurement of Government Furnished Equipment (GFE)
- Initiate refurbishment of 1 launcher
- Initiate the buy of 24 interceptors, 2 TFCC TSGs, 2 launchers

**FY09 Planned Program: RDT&E Articles: Deliver 2 TFCC TSGs and 2 Launchers**

- Complete the final assembly of Launchers and TFCC TSGs
- Complete the fabrication and assembly of component hardware
- Continue the fabrication and assembly of initial spares
- Continue the fabrication and assembly of GFE
- Initiate the fabrication and assembly of BSC
- Initiate the fabrication and assembly of Interim Contractor Support System (ICSS)
- Initiate the fabrication and assembly of Missile Round Trainers
- Initiate the procurement of Common Support Equipment (CSE)

**C. Other Program Funding Summary**

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date <b>February 2007</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

**D. Acquisition Strategy**

THAAD follows 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 acquisition strategy for Block 2010 Fire Unit #2 will continue under Block 2008 Fire Unit #1 which will consist of the following: (1) Sole Source, CPAF/Cost Plus Incentive Fee (CPIF) contract to Lockheed Martin Space Systems Company, which awarded 22 Dec 06, as the element integrator and to procure Interceptors, Launchers, THAAD Fire Control and Communication and Peculiar Support Equipment hardware and (2) Sole Source contract to Raytheon targeted for award in FY07 to procure Army Navy/Transportable Radar Surveillance - Model 2 Radar. The Block 2010 Fire Unit will provide a significant capability to protect deployed U.S. and allied forces, specified civilian population centers, or selected sites within the U.S.

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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<b>I. Product Development Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Fire Unit #2</b>										
Prime Contract	SS/CPIF	LMSSC/CA, AL, TX, AL, NH, IL, FL, MD	0	0	N/A	58,511	1/2Q	114,543	1/2Q	173,054
Prime Contract	SS	Raytheon/ MA, AL	0	20,000	N/A	55,950	1/2Q	130,337	1/2Q	206,287
Subtotal Product Development			0	20,000		114,461		244,880		379,341

**Remarks**

<b>II. Support Costs Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Fire Unit #2</b>										
GFE	MIPR	Multiple to include TACOM/ CECOM/ USAADA SCH/ MI, NJ, TX	0	0	N/A	10,690	1/2Q	0	N/A	10,690
CSE	MIPR	Multiple to include CECOM, TACOM, & GSA/ MI, NJ, TX	0	0	N/A	0	N/A	9,700	1/2Q	9,700
Subtotal Support Costs			0	0		10,690		9,700		20,390

**Remarks**

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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<b>III. Test and Evaluation Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										

**Remarks**

<b>IV. Management Services Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										

**Remarks**

Project Total Cost			0	20,000		125,151		254,580		399,731
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**Remarks**

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile		Date <b>February 2007</b>																																			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>													R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>																								
Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>Contractual Activities &amp; Events</b>																																					
Fire Unit Fielding #1 and #2 Contract Award					▲																																
Fire Unit Radar #2 Contract Award						△																															
Field Support and CLS Contract Award																				△																	
<b>Deliveries</b>																																					
Fire Unit #2																	▲	—	—	—	▲																
<b>Legend</b>																																					
▲	Significant Event (complete)	▲	Significant Event (planned)																																		
★	Milestone Decision (complete)	★	Milestone Decision (planned)																																		
◆	Element Test (complete)	◇	Element Test (planned)																																		
▽	System Level Test (complete)	▽	System Level Test (planned)																																		
▲—▲	Complete Activity	▲—▲	Planned Activity																																		

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>Contractual Activities &amp; Events</b>								
Fire Unit Fielding #1 and #2 Contract Award		1Q						
Fire Unit Radar #2 Contract Award		2Q						
Field Support and CLS Contract Award					1Q			
<b>Deliveries</b>								
Fire Unit #2				3Q-4Q	1Q-4Q			

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>						Date <b>February 2007</b>		
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<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>				

COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
R107 Terminal High Altitude Area Defense (THAAD) Block 2012	0	0	0	67,815	505,440	713,382	538,723	365,121
RDT&E Articles Qty	0	0	0	0	0	36	23	1

*Note: RDT&E Articles for Fire Units: FY09 - Buy 48 Full-up Interceptors. FY10 - Buy 2 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radars for Fire Units #3 and #4. FY11 - Buy 4 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) and 6 Launchers; Deliver 36 Full-up Interceptors for Fire Units #3 and #4. FY12 - Deliver 1 AN/TPY-2 for Fire Unit #3, 12 Full-up Interceptors for Fire Unit #4, 6 Launchers, and 4 TFCC TSGs for Fire Units #3 and #4. FY13 - Deliver 1 AN/TPY-2 Radar for Fire Unit #4.*

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

The Terminal 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 2012 further enhances the MDA TDS 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 and terminal phases of their trajectory. The Block 2012 THAAD 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. Five major components (Interceptors, Launchers, Army Navy/Transportable Radar Surveillance - Model (AN/TPY-2) Radar, THAAD Fire Control and Communication (TFCC), and THAAD-Peculiar Support Equipment) will be integrated into the THAAD element and BMDS.

**Block 2012:**

Block 2012 is the next incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. This continues the concept of a rapidly deployable configuration to support the TDS mission as well as supporting the strategic surveillance missions. Continued development will include improved survivability of interceptors in a Level I High Altitude Environment Nuclear Survivability (HAENS) environment, provide the ability to participate in netted training exercises with BMDS Distributed Multi-echelon Training System (DMETS), include remotely placed launchers for an improved defended area and defense against Intermediate Range Ballistic Missiles (IRBMs), provide the capability to launch THAAD interceptors from other BMDS sensor elements, and expand the system's capability to provide THAAD sensor data to the BMDS. This adds the THAAD Interceptor Engage on AN/TPY-2 (THAAD Mode) Radar using a cue from other BMDS sensors. Block 2012 also provides continued manufacturing of the Fire Unit hardware. In Block 2012, THAAD Fire Units #3 and #4 consisting of 48 Interceptors, 6 Launchers, 2

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>February 2007</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>		
AN/TPY-2 Radars and 4 TFCC TSGs will be delivered. Block 2012 continues the Field Support and Contractor Logistic Support for fielded Fire Unit hardware.				
<b>B. Accomplishments/Planned Program</b>				
	FY 2006	FY 2007	FY 2008	FY 2009
Weapon Sys Engr & Integ Team	0	0	0	3,000
RDT&E Articles (Quantity)	0	0	0	0
Responsible for all engineering efforts required to translate approved Ballistic Missile Defense System (BMDS) capabilities and requirements into operationally suitable THAAD capability blocks. Coordinate and conduct requirements analysis, system integration and verification, software engineering to include independent verification and validation, configuration management, and BMDS integration for each THAAD component by working through the Integrated Process Team (IPT) process on a balanced contractor-government team. Additionally, responsible for all aspects of risk management and security for the THAAD program.				
FY09 Planned Program:				
<ul style="list-style-type: none"> <li>Initiate study to determine requirements for Level 1 High Altitude Environment Nuclear Survivability (HAENS) compliance</li> </ul>				
	FY 2006	FY 2007	FY 2008	FY 2009
FIRE UNIT #3 and #4	0	0	0	64,815
RDT&E Articles (Quantity)	0	0	0	0
Fire Unit #3 and #4 will include 48 Interceptors, 6 Launchers, 2 Army Navy/Transportable Radar Surveillance - Model 2s (AN/TPY-2) Radar, 4 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs), and the required Peculiar and Common Support Equipment. The Fire Units will be fielded in FY12 and FY13 and, following operational testing, will be transitioned to the U.S. Army.				
FY09 Planned Program:				
<ul style="list-style-type: none"> <li>Initiate and complete the Initial Baseline Review (IBR)</li> <li>Initiate buy of 48 Interceptors</li> </ul>				



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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2007		
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>C. Other Program Funding Summary</b>									
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
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PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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**D. Acquisition Strategy**

THAAD follows 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 2012 development program will be a Sole Source Cost Plus Award Fee (CPAF) contract with Lockheed Martin Space Systems Company (LMSSC), Sunnyvale, CA, targeted for award in the first quarter of FY09. The acquisition strategy for Block 2012 Fire Unit #3 and #4 will consist of the following: (1) Sole Source, Fixed Price Incentive (FPI) contract to LMSSC targeted for award in FY09 as the element integrator and to procure Interceptors, Launchers, THAAD Fire Control and Communication and Peculiar Support Equipment hardware and (2) Sole Source contract to Raytheon targeted for award in FY10 to procure Army Navy/Transportable Radar Surveillance - Model 2 Radar. Block 2012 development activities, as well as the acquisition of the Fire Units, will provide a significant capability to protect deployed U.S. and allied forces, specified civilian population centers, or selected sites within the U.S.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>					
<b>I. Product Development Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>FIRE UNIT #3 and #4</b>										
Prime Contract	SS/FPI	LMSSC/CA, AL, TX, AL, NH, IL, FL, MD	0	0	N/A	0	N/A	64,815	1/2Q	64,815
Subtotal Product Development			0	0		0		64,815		64,815
<b>Remarks</b>										
<b>II. Support Costs Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Weapon Sys Engr &amp; Integ Team</b>										
OGA	MIPR	Multiple to include RDEC & SMDC/ Huntsville, AL	0	0	N/A	0	N/A	3,000	1Q	3,000
Subtotal Support Costs			0	0		0		3,000		3,000
<b>Remarks</b>										

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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<b>III. Test and Evaluation Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										

**Remarks**

<b>IV. Management Services Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										

**Remarks**

Project Total Cost			0	0		0		67,815		67,815
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**Remarks**

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>February 2007</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013															
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4												
<b>Contractual Activities &amp; Events</b>																																												
Block 2012 Development Contract Award																																												
Fire Unit Fielding #3 and #4 Contract Award																																												
Fire Unit Radar #3 and #4 Contract Award																																												
Field Support and CLS Contract Award																																												
<b>Deliveries</b>																																												
Fire Unit #3																																												
Fire Unit #4																																												

<b>Legend</b>	
<ul style="list-style-type: none"> <li> Significant Event (complete)</li> <li> Milestone Decision (complete)</li> <li> Element Test (complete)</li> <li> System Level Test (complete)</li> <li> Complete Activity</li> </ul>	<ul style="list-style-type: none"> <li> Significant Event (planned)</li> <li> Milestone Decision (planned)</li> <li> Element Test (planned)</li> <li> System Level Test (planned)</li> <li> Planned Activity</li> </ul>

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>Contractual Activities &amp; Events</b>								
Block 2012 Development Contract Award				1Q				
Fire Unit Fielding #3 and #4 Contract Award				1Q				
Fire Unit Radar #3 and #4 Contract Award					1Q			
Field Support and CLS Contract Award						1Q		
<b>Deliveries</b>								
Fire Unit #3					3Q-4Q	1Q-4Q	1Q-3Q	
Fire Unit #4					4Q	1Q-4Q	1Q-4Q	1Q-3Q

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 NOMENCLATURE</b>				
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>				
COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0401 Israeli Arrow Program	123,459	134,985	73,572	74,515	78,163	79,511	81,927	83,238
RDT&E Articles Qty	33	32	8	9	0	0	0	0

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

This project provides funding for the Arrow Weapon System (AWS) development, to include the Arrow System Improvement Program (ASIP), Co-production of Arrow Intercept Missiles, 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 Arrow Weapon System provides Israel an indigenous capability to defend against short and medium range ballistic missiles. However, the current threats for which Arrow is designed are limited in range, maneuver, and deception. ASIP is improving the AWS to counter the more advanced, emerging threats which are longer in range, much faster, have more destructive warheads that require lower defense system leakage, and are intentionally deceptive in their deployment and targeting methods during flight. Arrow also provides protection against ballistic missile attacks to U.S. forces deployed to the region allowing U.S. freedom of action in future contingencies. In addition to the geo-strategic goals of the Arrow cooperative effort, the United States derives considerable technical benefit from its participation in these projects. Technologies cooperatively developed under these projects provide risk reduction and alternative technologies for U.S. ballistic missile defense programs such as phenomenology and kill assessment data. Additionally, the U.S. gains from the knowledge and experience of the Israeli Defense Forces operation of a multi-layered defense architecture. U.S. participation in the Arrow development effort also ensures interoperability of the Arrow and the Israeli Missile Defense System with deployed U.S. missile defense assets. The ASIP effort will enhance the performance of the AWS to defeat longer-range and more robust ballistic missile threats expected to be introduced in the Middle East in the near future. Testing of the enhanced AWS in the U.S. against longer range threats is planned for FY09 to verify Arrow's performance and capability. 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. Co-production will continue to increase the industrial production capacity of the Arrow II interceptor. Finally, the David's Sling Short Range Ballistic Missile Defense Program (SRBMD) will start Full Scale Development and has been moved to a new project task 0406.

**B. Accomplishments/Planned Program**

	FY 2006	FY 2007	FY 2008	FY 2009
Arrow System Improvement Program (ASIP)	54,967	55,462	55,000	30,000
Israeli Arrow Program	1	2	2	3

The Arrow System Improvement Program (ASIP) is a cooperative effort conducted under the ASIP International Agreement between the United States and the State of Israel. The Arrow System Improvement Program commenced on March 13, 2001 and will run through September 2009. ASIP

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>February 2007</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>	
<p>is a follow-on effort to the Arrow Deployment Program (ADP) to assure that Arrow retains system effectiveness against evolving longer-range, more robust regional Theater Ballistic Missile (TBM) threats.</p> <p>FY06 Accomplishments: RDT&amp;E Articles: (One Missile Total) Block 3 Arrow test missile for intercept testing.</p> <ul style="list-style-type: none"><li>• Completed ASIP Phase II to develop activities to improve Arrow Weapon System performance to defend Israel from emerging ballistic missile threats.</li><li>• Conducted ASIP System Critical Design Review.</li><li>• Conducted Arrow System Test (AST) 10 which was an intercept flight test in Israel against a Black Sparrow air launched Target.</li><li>• Continued enhancing Arrow interoperability development and validation to include engagement coordination.</li></ul> <p>FY07 Planned Program: RDT&amp;E Articles: (Two Missile Total) One Block 3.5 Arrow test missile for intercept testing and One Block 4.0 Arrow II test missile for Flyout testing.</p> <ul style="list-style-type: none"><li>• Conduct AST - 11 (Block 3.5 intercept of the Black Sparrow Target), AST -12 (Block 4.0 flyout) and Blue Sparrow Target Flyout flight tests in Israel.</li><li>• Conduct Joint Interoperability Exercise Juniper Cobra with Israel and U.S. forces.</li><li>• Continue enhancing Arrow interoperability development and validation to include engagement coordination.</li><li>• Finalize Block 4.0 configuration through Critical Design Process.</li><li>• Initiate verification and validation, Phase III of the ASIP program.</li></ul> <p>FY08 Planned Program: RDT&amp;E Articles: (Two Missile Total) Two Block 4.0 Arrow test missiles for intercept testing.</p> <ul style="list-style-type: none"><li>• Conduct AST -13 and AST -14 (Block 4.0 intercept of Blue Sparrow Target) flight tests in Israel.</li><li>• Continue enhancing Arrow interoperability development and validation to include engagement coordination.</li><li>• Initiate verification and validation, Phase III of the ASIP program.</li></ul>		



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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>February 2007</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>		
<p>FY09 Planned Program:                      RDT&amp;E Articles: (Three Missile Total) Three Block 4.0 Arrow test missiles for intercept testing.</p> <ul style="list-style-type: none"> <li>• Conduct Caravan II flight tests at U.S. test range. Test will include one flight test intercepting a Long Range Air Launched Target and a second flight test of two Arrow missiles simultaneously intercepting a Short Range Air Launched target and a Liquid Fuel System Target.</li> <li>• Continue enhancing Arrow interoperability development and validation to include engagement coordination.</li> <li>• Initial Operational Capability of the Block 4.0 Arrow Weapon System</li> <li>• Conduct Joint Interoperability Exercise Juniper Cobra with Israel and U.S. forces.</li> </ul>				
	FY 2006	FY 2007	FY 2008	FY 2009
Arrow Block 5.0	0	0	0	25,000
RDT&E Articles (Quantity)	0	0	0	0
<p>The Arrow System Improvement Program (ASIP) is the 4th program since 1988 working with Israel to develop and improve the Arrow Weapon System. The current ASIP program will finish in 2009 with the initial operational capability of Block 4.0. MDA has planned for a subsequent development program originally designated Arrow Block 5.0. Recently, with emerging threats of WMD from regional enemy's, the Israeli Missile Defense Organization has determined a need for an upper-tier BMD system to complement the current Arrow Weapon System. They are working with Israeli industry to design an Arrow III. Meanwhile, MDA is analyzing alternatives including U.S. BMDS elements to meet the Israel defense requirements.</p> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> <li>• Finalize System Requirements Definition and Risk Reduction activities.</li> </ul>				
	FY 2006	FY 2007	FY 2008	FY 2009
Arrow Missile Production Program (AMPP)	52,669	53,000	12,383	13,249
RDT&E Articles (Quantity)	32	30	6	6
<p>The co-manufacturing project will further enhance the Arrow Weapon System by establishing a capability in the United States and the State of Israel to co-produce additional Arrow missiles or components of such missiles. The goals of the Co-production effort are to create the ability to accelerate production of Arrow missiles to meet Israel's defense requirements and advance the U.S. industrial and technology base in defensive ballistic missile producibility. The prime contractor is Israeli Aircraft Industries (IAI). Boeing is a subcontractor with ~30% work share for producing components of the Arrow II Intercept Missile.</p>				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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The FY07 Defense Appropriations Act, added \$40M to Arrow Co-production which with Israeli's share of funding increases Arrow II interceptor production by ~20 additional missiles.

**FY06 Accomplishments:**

- Contracted Option I exercised with IAI and Boeing for additional production interceptor quantities
- Conducted sustainer static fire test

**FY07 Planned Program:**

- Complete Option I production quantities
- Initiate Option II with IAI and Boeing for additional production interceptor quantities
- Execute production Contract Option III

**FY08 Planned Program:**

- Complete Option II production quantities
- Initiate Option III with IAI and Boeing for final interceptor quantities production

**FY09 Planned Program:**

- Complete planned production quantities

	FY 2006	FY 2007	FY 2008	FY 2009
Israeli Test Bed (ITB)	3,535	3,535	3,535	3,535
RDT&E Articles (Quantity)	0	0	0	0

The Israeli Test Bed (ITB) is a cooperative effort conducted under the Theater Ballistic Missile Defense Test Bed Memorandum of Agreement between the U.S. and Israel. The ITB program commenced on 30 March 1989. The ITB is a large scale human-in-the-loop (HIL) modeling and simulation facility for the purpose of developing, analyzing, and evaluating candidate architectures, battle management concepts, and engagement algorithms. The principal ITB facility resides at Tadiran Systems Division in Holon, Israel. A second ITB capability is operational at the U.S. Army's Space and Missile Defense Command in Huntsville, Alabama.

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>		Date <b>February 2007</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>	
<p>FY06 Accomplishments:</p> <ul style="list-style-type: none"><li>• Provided software enhancements in ITB for experiments to be conducted in FY06 and for those planned in FY07</li><li>• Evaluated ASIP performance specifications against future threats and assess Arrow enhanced interoperability between Israeli and U.S. missile defense systems</li><li>• Conducted a preparation exercise for a 2007 live exercise</li><li>• Developed and tested potential expanded Israeli / U.S. Battle Management tools for information sharing and coordination in combined missile defense operations</li><li>• Expanded of SRBM models to evaluate tactics and requirements</li><li>• ITB model expansion and conduct of regional defense experiment</li><li>• Completed software code transfer to enhance future development of ITB</li></ul> <p>FY07 Planned Program:</p> <ul style="list-style-type: none"><li>• Design, Code, and Integrate software enhancements in ITB for experiments to be conducted in FY07 and for those planned in FY08</li><li>• Design, Conduct and Provide analysis on ITB experiments in FY07</li><li>• Use expanded models of new concepts and systems for SRBM and regional defense during combined Live exercise, and support revised Operation Plans (OPLANs) as necessary</li><li>• Development of tools, interfaces and tactics for SRBMD systems</li><li>• Evaluation of regional defense concepts and impacts on interoperability</li><li>• Provide for a joint experiment to analyze regional defense concepts</li><li>• Proceed on plan to further modularize ITB to bring greater capability and flexibility to US/Israeli users</li></ul> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"><li>• Design, Code, and Integrate software enhancements in ITB for experiments to be conducted in FY08 and for those planned in FY09</li><li>• Design, Conduct and Provide analysis on ITB experiments in FY08</li><li>• Development of tools, interfaces and tactics for SRBMD systems</li><li>• Evaluation of regional defense concepts and impacts on interoperability</li><li>• Proceed on plan to further modularize ITB to bring greater capability and flexibility to US/Israeli users</li></ul>		

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>			Date <b>February 2007</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>R-1 NOMENCLATURE</b>		
<b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>		
<p>FY09 Planned Program:</p> <ul style="list-style-type: none"> <li>• Design, Code, and Integrate software enhancements in ITB for experiments to be conducted in FY09 and for those planned in FY10</li> <li>• Design, Conduct and Provide analysis on ITB experiments in FY09</li> <li>• Evaluation of regional defense concepts and impacts on interoperability</li> <li>• Proceed on plan to further modularize ITB to bring greater capability and flexibility to US/Israeli users</li> </ul>				
	FY 2006	FY 2007	FY 2008	FY 2009
Israeli Systems Architecture and Integration (ISA&I)	2,110	2,147	2,215	2,286
RDT&E Articles (Quantity)	0	0	0	0
<p>The Israeli Systems Architecture and Integration (ISA&amp;I) program is a cooperative, jointly funded effort by MDA and the Israeli Ministry of Defense (IMOD) that provides analyses and options for the Arrow Weapon System (AWS) and Israeli National Missile Defense architecture. Program objectives are to assess the ballistic missile threats, provide analyses and architecture options, assess missile defense system robustness and issues, and assess Israeli and U.S. missile defense interoperability issues. The ISA&amp;I began in FY 00 to analyze enhancements to the AWS that would be necessary for the system to maintain a robust capability against evolving regional threats. The ISA&amp;I effort is contracted by MDA to WALES, Ltd, an Israeli consulting firm.</p>				
<p>FY06 Accomplishments:</p> <ul style="list-style-type: none"> <li>• Assessed IMDS performance against emerging regional ballistic missile threats.</li> <li>• Refined growth path options necessary for the Arrow missile defense system to remain an effective ballistic missile defense for the State of Israel.</li> <li>• Evaluated Israeli architecture studies to assess near-term U.S. missile defense systems and their impact on contributing to future Israeli missile defense architectures.</li> </ul>				
<p>FY07 Planned Program:</p> <ul style="list-style-type: none"> <li>• Assess IMDS performance against emerging regional ballistic missile threats.</li> <li>• Refine growth path options necessary for the Arrow missile defense system to remain an effective ballistic missile defense for the State of Israel.</li> <li>• Evaluate Israeli architecture studies to assess near-term U.S. missile defense systems and their impact on contributing to future Israeli missile defense architectures.</li> </ul>				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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**FY08 Planned Program:**

- Assess IMDS performance against emerging regional ballistic missile 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.

**FY09 Planned Program:**

- Assess IMDS performance against emerging regional ballistic missile 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.

	FY 2006	FY 2007	FY 2008	FY 2009
Program Support	778	441	439	445
RDT&E Articles (Quantity)	0	0	0	0

The program support task encompasses activities that support, but are not part of, the U.S./Israeli cooperative programs. These activities include the documentation of foreground and background data rights for ASIP, ITB, ADP, and legacy programs; security support to include development and maintenance of security plans and classification guides; and analysis and engineering support of the ISA&I and ITB programs. It also provides for contractor support and expertise in support of the Program Element Monitor.

**FY06 Accomplishments:**

- Continued documentation of background/foreground data rights for ASIP, Arrow co-production, and ITB.
- Maintained security plans and classification guides.
- Managed and supported ITB modifications and experiments.
- Supported Israeli and U.S. Missile Defense System integration and related test activities.

**FY07 Planned Program:**

- Continue documentation of background/foreground data rights for ASIP, Arrow co-production, and ITB.
- Maintain security plans and classification guides.

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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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- Manage and support ITB modifications and experiments.
- Support Israeli and U.S. Missile Defense System integration and related test activities.

**FY08 Planned Program:**

- 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 Israeli and U.S. Missile Defense System integration and related test activities.

**FY09 Planned Program:**

- 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 Israeli and U.S. Missile Defense System integration and related test activities.

	FY 2006	FY 2007	FY 2008	FY 2009
Short Range Ballistic Missile Defense (SRBMD)	9,400	20,400	0	0
RDT&E Articles (Quantity)	0	0	0	0

Israel has a need for a wide area active defense system against the current and growing threat to Israeli civilians from short-range, relatively low tech and inexpensive ballistic missiles. The current Israeli Missile Defense Architecture (PATRIOT and Arrow) have capability against some of these short range missile threats but does not provide a cost effective defense. Israeli's recent conflict underscored the strategic effort of short range rockets and ballistic missiles.

Israel has completed its joint 18 month definition/risk reduction phase for developing a low cost SRBMD capability as an enhancement to the Arrow Weapon System. In May 2006, the Israeli Missile Defense Organization (IMDO) downselected to the David's Sling Weapon System (DSWS) proposed by Rafael/Raytheon.

The FY07 Appropriations Act, specified \$20.4M for the SRBMD joint feasibility study. Note: with the completion of the study, Israel is beginning the first phase of Full Scale Development for the David's Sling system. The \$2M in the FY07 President's Budget will be used by MDA to study the military list of the David's Sling and how it could/should be integrated into the U.S. BMDS. This will be a true joint international co-development

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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program. Unlike the historical management of the Arrow Weapon System, MDA will ensure U.S. acquisition practices are utilized during the program. While there are currently no U.S. requirements for this system, MDA will ensure system development doesn't preclude future U.S. benefits for using this system against the asymmetric threat.

**FY06 Accomplishments:**

- Israeli Missile Defense Organization (IMDO)/MDA completed the joint feasibility and risk reduction study
- Israeli Missile Defense Organization downselected to one candidate

**FY07 Planned Program:**

- Determine System Requirements
- Complete Preliminary Design Review
- Make Full Scale Development decision

**FY08 Planned Program:**

- See task 0406 for the FY08 David's Sling Program

**FY09 Planned Program:**

- See task 0406 for the FY09 David's Sling Program

**C. Other Program Funding Summary**

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

**D. Acquisition Strategy**

As a bi-lateral cooperative program with the State of Israel, the Arrow acquisition strategy doesn't fall under any normal DoD Acquisition Strategy. The program is managed by an Israeli Co-Program Manager and, equal in responsibility, an U.S. Co-Program Manager. All Arrow contracts are on a cost-share basis with Israel, normally 50/50. Note that half of the Israeli share is from non-financial contributions like background information, facilities and personnel. With 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. Additionally with Arrow Missile Production, IMoD contracts on behalf of U.S. government to IAI. IAI then subcontracts to Boeing for manufacture of U.S. components. IAI manufactures Israeli components and performs final assembly. For the Israeli Test Bed, Space and Missiles Defense Command (SMDC) Huntsville contracts directly with Tadiran while IMoD provides additional funds to SMDC. Finally, MDA contracts directly with WALES, Ltd for the Israeli System Architecture and Integration.



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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2007		
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>I. Product Development Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Arrow System Improvement Program (ASIP)</b>										
Arrow System Improvement Program (ASIP)	FFP	IAI/ Israel	323,617	55,462	1Q	55,000	N/A	30,000	N/A	464,079
<b>Arrow Block 5.0</b>										
Arrow Missile Segment Enhancement	FFP	IAI/ Israel	0	0	N/A	0	N/A	25,000	N/A	25,000
<b>Arrow Missile Production Program (AMPP)</b>										
Arrow Missile Production	FFP	IAI&Boeing/ Israel&AL	220,482	53,000	2Q	12,383	N/A	13,249	N/A	299,114
<b>Israeli Test Bed (ITB)</b>										
Israeli Test Bed (ITB)	FFP	Tadiran/ Israel	16,205	3,535	1Q	3,535	N/A	3,535	N/A	26,810
<b>Israeli Systems Architecture and Integration (ISA&amp;I)</b>										
Israeli Systems Architecture and Integration (ISA&I)	FFP	Wales, Ltd/ Israel	9,542	2,147	1Q	2,215	N/A	2,286	N/A	16,190
<b>Short Range Ballistic Missile Defense (SRBMD)</b>										
Short Range Ballistic Missile Defense Study	FFP	IMDO/ Israel	10,000	20,400	N/A	0	N/A	0	N/A	30,400
Subtotal Product Development			579,846	134,544		73,133		74,070		861,593
<b>Remarks</b>										

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>					
<b>II. Support Costs Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Program Support</b>										
Program Support	FFP	Various/ Ala/Va	7,490	441	1Q	439	N/A	445	N/A	8,815
Subtotal Support Costs			7,490	441		439		445		8,815
<b>Remarks</b>										
<b>III. Test and Evaluation Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										
<b>Remarks</b>										
<b>IV. Management Services Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										
<b>Remarks</b>										
Project Total Cost			587,336	134,985		73,572		74,515		870,408
<b>Remarks</b>										

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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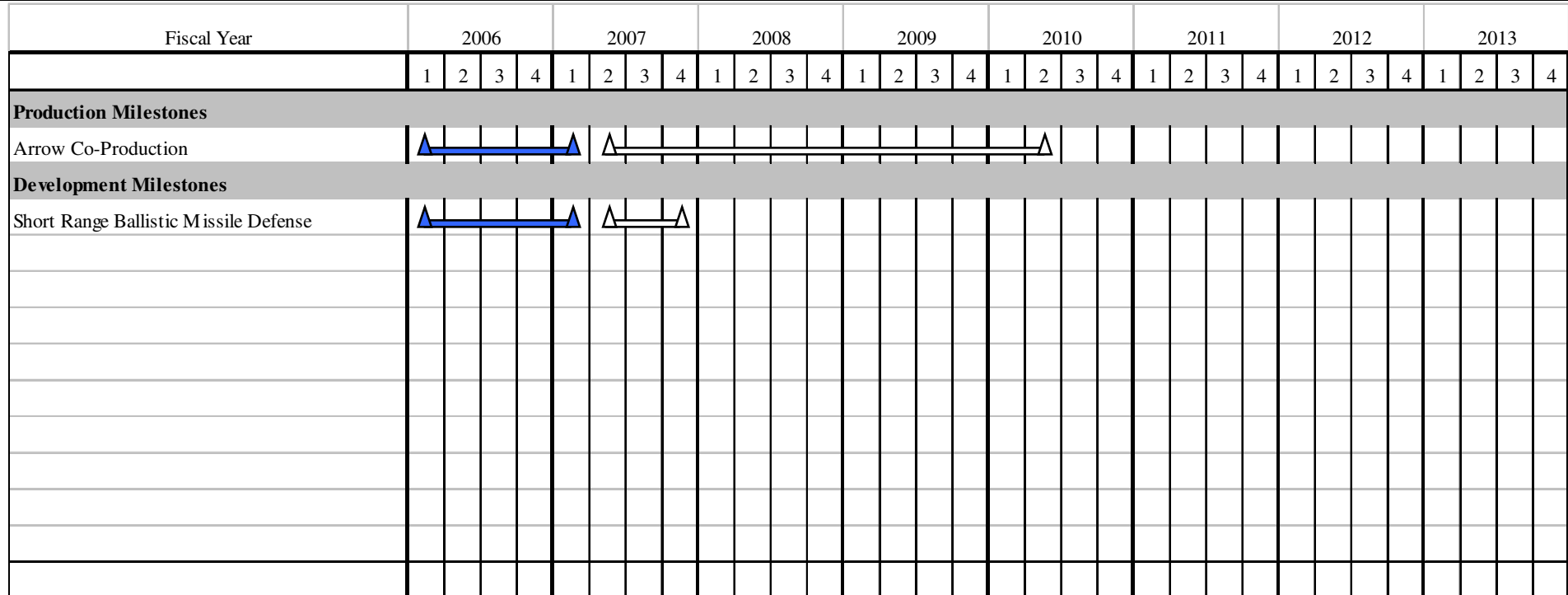
Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>Integrated Flight Test</b>																																					
ASIP Flight Tests in Israel	▲				△				△																												
Enhanced Arrow Tests in U.S.															△	△																					
<b>Other</b>																																					
Missile Defense Architecture Assessment			▲																																		
<b>Communications</b>																																					
Interoperability Tests	▲			▲				△				△																									
Interoperability Field Demonstration							△								△																						
<b>Program Milestones</b>																																					
ITB Experiments (Three each year)	▲	—	—	▲	▲	—	—	▲	▲	—	—	▲																									
ASIP Phase II	▲	—	—	▲	▲	—	—	▲																													
ASIP Phase III											▲	—	▲																								
ASIP Follow-On Feasibility Study							▲	—	▲																												
Arrow Missile Segment Enhancement															▲	—	▲																				▲

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	★	Milestone Decision (planned)
◆	Element Test (complete)	◆	Element Test (planned)
▼	System Level Test (complete)	▼	System Level Test (planned)
▲—▲	Complete Activity	▲—▲	Planned Activity

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>February 2007</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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<b>Legend</b>	
▲	Significant Event (complete)
★	Milestone Decision (complete)
◆	Element Test (complete)
▼	System Level Test (complete)
▲-----▲	Complete Activity
▲	Significant Event (planned)
★	Milestone Decision (planned)
◆	Element Test (planned)
▼	System Level Test (planned)
▲-----▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
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 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>Integrated Flight Test</b>								
ASIP Flight Tests in Israel	1Q	2Q	2Q	1Q				
Enhanced Arrow Tests in U.S.				3Q-4Q				
<b>Other</b>								
Missile Defense Architecture Assessment	3Q							
<b>Communications</b>								
Interoperability Tests	1Q,4Q	4Q	4Q					
Interoperability Field Demonstration		2Q		2Q				
<b>Program Milestones</b>								
ITB Experiments (Three each year)	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q				
ASIP Phase II	1Q-4Q	1Q-3Q						
ASIP Phase III			1Q-4Q					
ASIP Follow-On Feasibility Study		3Q-4Q	1Q					
Arrow Missile Segment Enhancement				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
<b>Production Milestones</b>								
Arrow Co-Production	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q			
<b>Development Milestones</b>								
Short Range Ballistic Missile Defense	1Q-4Q	1Q-4Q						

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>							
COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0406 Short Range Ballistic Missile Defense	0	0	7,000	9,000	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

The summer conflict between Israel and Hezbollah underscored the strategic effect of short range, inexpensive ballistic missiles attacks on civilian populations. The current Israeli Missile Defense Architecture (comprised of PATRIOT and Arrow) has capability against some of these short-range missile threats but does not provide a cost-effective defense. The goal of DSWS is to provide a lower cost (\$350K per missile) defense capability (as compared to the \$2-3M per Arrow or Patriot missile).

In March 2005, Israel and the U.S. initiated a joint 18-month feasibility study of a low-cost SRBMD capability as a compliment to the Arrow Weapon System (AWS). This was followed in May 2006 by Israeli's selection of the David's Sling Weapon System proposed by Rafael (teamed with Raytheon) for their SRBMD solution. While currently there is no U.S. requirement for a SRBMD system, MDA's mission is to defend against all ranges and all phases and does not have any programs in development to address this short-range asymmetric threat. While currently there is no intent for U.S. purchase of the DSWS, MDA plans to influence specifications and development decisions to ensure the system could be interoperable with the U.S. Ballistic Missile Defense System (BMDS) and potentially suitable for U.S. needs.

**B. Accomplishments/Planned Program**

	FY 2006	FY 2007	FY 2008	FY 2009
David's Sling Weapon System	0	0	7,000	9,000
RDT&E Articles (Quantity)	0	0	0	0

The FY06 and FY07 tasks were completed under the Arrow System Improvement Program Memorandum of Agreement (MOA). With the start of Full Scale Development, the David's Sling Weapon System Cooperative Program will be accomplished under a new MOA and funded through this new task.

**FY08 Planned Program:**

- Complete Critical Design Review of the entire David's Sling system's Detailed Design requirements
- Deliver test launcher
- Begin interceptor flyout and configuration tests

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date <b>February 2007</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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FY09 Planned Program:

- Hold interception flight tests
- Acquire first Multi Mission Radar
- Start up Production

**C. Other Program Funding Summary**

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
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PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
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><u>D. Acquisition Strategy</u></b> Negotiations are ongoing between U.S. and State of Israel on the specific agreements for this cooperative program.		



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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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<b>I. Product Development Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>David's Sling Weapon System</b>			0	0	N/A	0	N/A	0	N/A	
David's Sling	FFP	IAI&Raytheon/ Israel/AZ	0	0	4Q	7,000	N/A	9,000	N/A	16,000
<b>Subtotal Product Development</b>			0	0		7,000		9,000		16,000

**Remarks**

<b>II. Support Costs Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Subtotal Support Costs</b>										

**Remarks**

<b>III. Test and Evaluation Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>Subtotal Test and Evaluation</b>										

**Remarks**

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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**IV. Management Services Cost (\$ in Thousands)**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										

**Remarks**

Project Total Cost			0	0		7,000		9,000		16,000
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**Remarks**

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<b>Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	<b>R-1 NOMENCLATURE</b> 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Development Milestones</b>																																
Critical Design Review												Δ																				
<b>Flight Tests</b>																																
System Demonstration											Δ	Δ		Δ																		
<b>System Engineering</b>																																
Develop Initial Design									Δ	—————				Δ																		

**Legend**

	Significant Event (complete)		Significant Event (planned)
	Milestone Decision (complete)		Milestone Decision (planned)
	Element Test (complete)		Element Test (planned)
	System Level Test (complete)		System Level Test (planned)
	Complete Activity		Planned Activity

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<b>Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail</b>						Date <b>February 2007</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>Development Milestones</b>								
Critical Design Review			4Q					
<b>Flight Tests</b>								
System Demonstration			3Q,4Q	3Q				
<b>System Engineering</b>								
Develop Initial Design			1Q-4Q	1Q-4Q				

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
COST (\$ in Thousands)	
	FY 2006    FY 2007    FY 2008    FY 2009    FY 2010    FY 2011    FY 2012    FY 2013
0806 PAC-3 Block 2006	0    1,593    982    0    0    0    0    0
RDT&E Articles Qty	0    0    0    0    0    0    0    0

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

Upper Tier BM intercepts produce multiple debris tracks that increase radar loading for Lower Tier Missile Defense systems and may potentially lead to missile wastage if debris tracks are engaged. Currently fielded systems must mitigate Upper Tier Intercept Debris effects.

This effort will enable the PAC-3 element of the BMDS to manage radar resources effectively as well as preventing missile wastage on debris created by BMDS Upper Tier elements engagements, enabling a more effective management of BMDS battlespace.

**B. Accomplishments/Planned Program**

	FY 2006	FY 2007	FY 2008	FY 2009
PAC-3 Debris Mitigation	0	1,593	982	0
RDT&E Articles (Quantity)	0	0	0	0

**FY07 Planned Program:**

- Primary SW Design, Coding and Testing of the ECP Algorithm
- Developmental and Operational Testing
- Leveraged participation in FT for ECP checkout

**C. Other Program Funding Summary**

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098

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<b>Missile Defense Agency (MDA) Exhibit R-2A RDT&amp;E Project Justification</b>							Date <b>February 2007</b>		
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>				
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	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

**D. Acquisition Strategy**

The design objective of the Patriot system is to provide an element of the Ballistic Missile Defense System capable of being modified to cope with the evolving threat. This strategy minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems.

As a result of the 17 March 2005 MDA CCB approval of ECP-0024 Upper Tier Debris Mitigation, LTPO plans to implement ECP-0024 over a 4 FY period with a projected completion date of 1QTR FY08. The implementation of ECP-0024 will be demonstrated through a series of Flight Tests. Additionally, ECP-0024 is planned for implementation in the normal LTPO Post Deployment Build cycle.

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	<b>R-1 NOMENCLATURE</b> 0603881C Ballistic Missile Defense Terminal Defense Segment
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<b>I. Product Development Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>PAC-3 Debris Mitigation</b>										
			0	1,593	N/A	982	N/A	0	N/A	2,575
<b>Subtotal Product Development</b>			0	1,593		982		0		2,575

**Remarks**

Work in progress

<b>II. Support Costs Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>PAC-3 Debris Mitigation</b>										
<b>Subtotal Support Costs</b>			0	0		0		0		0

**Remarks**

<b>III. Test and Evaluation Cost (\$ in Thousands)</b>										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>PAC-3 Debris Mitigation</b>										
<b>Subtotal Test and Evaluation</b>			0	0		0		0		0

**Remarks**

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<b>Missile Defense Agency (MDA) Exhibit R-3 RDT&amp;E Project Cost Analysis</b>	Date <b>February 2007</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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**IV. Management Services Cost (\$ in Thousands)**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
<b>PAC-3 Debris Mitigation</b>										
Subtotal Management Services			0	0		0		0		0

**Remarks**

Project Total Cost			0	1,593		982		0		2,575
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**Remarks**



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











Date  
February 2007

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	2006				2007				2008				2009				2010				2011				2012				2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>BLOCK 2006</b>																																				
PAC-3	Δ																																			

Legend

- |   |                               |   |                              |
|---|-------------------------------|---|------------------------------|
|  | Significant Event (complete)  |  | Significant Event (planned)  |
|  | Milestone Decision (complete) |  | Milestone Decision (planned) |
|  | Element Test (complete)       |  | Element Test (planned)       |
|  | System Level Test (complete)  |  | System Level Test (planned)  |
|  | Complete Activity             |  | Planned Activity             |

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<b>Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail</b>						Date <b>February 2007</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>R-1 NOMENCLATURE</b> <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>BLOCK 2006</b>								
PAC-3	2Q							
R-4 placeholder - schedule not yet available								

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date <b>February 2007</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, DW/04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	R-1 NOMENCLATURE <b>0603881C Ballistic Missile Defense Terminal Defense Segment</b>
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COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0602 Program-Wide Support	23,278	17,078	22,754	23,409	19,284	15,262	13,035	11,530
RDT&E Articles Qty	0	0	0	0	0	0	0	0

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

Program-Wide Support provides funding for common non-headquarters support functions across the entire program such as strategic planning, program integration, business management, cost estimating, contracting, and financial management, to include preparation of financial statements, reimbursement of financial services provided by DFAS, internal review and audit, earned-value management, and program assessment. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Many of these costs reside within the Missile Defense Agency Executing Agents in the Services: Army Space and Missile Defense Command, Army PEO Space and Missile Defense, Office of Naval Research, and various Air Force laboratory and acquisition activities, although some functions and costs within this program element are performed by MDA employees assigned within the National Capital Region (NCR). Other costs included herein provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuation on a limited number of foreign contracts.

**B. Accomplishments/Planned Program**

	FY 2006	FY 2007	FY 2008	FY 2009
Civilian Salaries and Support	23,278	17,078	22,754	23,409
RDT&E Articles (Quantity)	0	0	0	0

See Section A: Mission Description and Budget Item Justification

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2007		
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>C. Other Program Funding Summary</b>									
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
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PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
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PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603892C Ballistic Missile Defense Aegis	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078	8,637,305
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PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947