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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	Continuing	Continuing
BX07: <i>Terminal High Altitude Area Defense (THAAD) Block 2.0</i>	728.934	552.113	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	1,281.047
EX07: <i>Terminal High Altitude Area Defense (THAAD) Block 5.0</i>	0.000	60.126	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	60.126
XX07: <i>Terminal High Altitude Area Defense (THAAD) Sustainment</i>	21.796	49.595	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	71.391
MD07: <i>THAAD</i>	0.000	0.000	420.463	0.000	420.463	240.177	324.264	477.944	498.688	Continuing	Continuing
WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	11.656	22.177	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	33.833
MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	0.000	0.000	1.200	0.000	1.200	1.230	1.270	1.308	1.347	Continuing	Continuing
WX26: <i>Israeli ARROW Program</i>	93.194	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	93.194
WX34: <i>Short Range Ballistic Missile Defense</i>	70.786	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	70.786
ZX40: <i>Program-Wide Support</i>	25.048	31.721	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	56.769
MD40: <i>Program-Wide Support</i>	0.000	0.000	14.819	0.000	14.819	8.868	11.177	21.731	21.682	Continuing	Continuing

Note
In accordance with the Missile Defense Agency revised budget structure, the contents previously planned in Projects EX07 (Block 5.0 Development) and Project XX07 (Sustainment) for FY 2009-FY 2010 are now captured in Project MD07.

The FY 2011 program is balanced reflecting the four focus areas of the current Missile Defense Program: to develop, rigorously test, and field an integrated Ballistic Missile Defense System (BMDS) architecture to counter existing regional threats, continue a viable Homeland Defense against rogue threats beyond 2030; demonstrate our proven technologies to show Missile Defense works; and develop technologies to hedge against future missile threat growth.

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>
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The best way to dissuade, deter, and defeat ballistic missile threats is through integrated ballistic missile defense capabilities -- weapons, sensors, and Command and Control/Battle Management and Communications (C2BMC). A potential or actual attack may cross regions and may fly higher and faster than stand-alone, autonomous capabilities operated by a single Military Service can defend against. Integrated BMD capabilities draw on space-, land-, and sea-based assets operated by multiple Services to provide both the best sensor information on the enemy missile's location and track as well as a more diverse and effective set of weapon options for the Combatant Commander to defeat the attack -- all connected by a unifying C2BMC system. As a result, an effort funded in a Program Element may be critical to the success of efforts in the other Program Elements -- we refer to these connections as ``interdependencies``. Throughout the budget justification materials we have attempted to highlight interdependencies in order to fully explain the relationship between different parts of the proposed program.

A. Mission Description and Budget Item Justification

We are developing and fielding a range of land based terminal capabilities to counter Short Range Ballistic Missiles (SRBMs) to protect forces deployed abroad, allies and friends. The land based SRBM defense capabilities of BMDS consist of the Patriot Advanced Capability-3 PAC-3) and Terminal High Altitude Area Defense (THAAD). THAAD is capable of countering Medium-Range Ballistic Missiles (MRBM) to protect deployed forces, critical assets on allied territory, and population centers. THAAD is a near-term transportable capability that will enhance the ability of Combatant Commanders to wage theater wars by intercepting SRBM and MRBM threats using hit-to-kill technologies. The THAAD missile is uniquely designed to intercept targets both inside and outside the Earth's atmosphere, making the use of countermeasures against THAAD in their terminal phase difficult.

The Terminal Defense Segment (TDS) Program Element (PE) funds the land based terminal-related element portions of Regional Defense Capabilities, Sustainment, and other Terminal-related mission area investment activities. The Ballistic Missile Defense System (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. The elements have the capability to engage and negate ballistic missiles and asymmetric threats in both the late mid-course (outside the atmosphere) and terminal phases (inside the atmosphere) of their trajectory, making countermeasures difficult and significantly mitigating Weapons of Mass Destruction (WMD). This adds significant capability to the BMDS as the threat missiles transition from the mid-course to terminal phase.

Ballistic Missile Defense (BMD) Systems Engineering provides System Description Documents and System Specifications for elements to design, build, integrate and test BMDS components. These products optimize performance at the system level and further ensure that the assessment of the designed BMD System is based on sufficient ground and flight testing. Compliance of THAAD element to BMD System level requirements is monitored in a series of requirements and design reviews both at the system and element levels.

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MDA has a set of Unifying Missile Defense Functions (UMDFs), which increase the effectiveness of the BMD System, (including probability of engagement success, increase in defended area and raid size capacity, additional redundancy of architecture, unity of command) through the integration of MDA developed capabilities. These UMDF efforts are Sensor Registration (reporting of sensor errors / biases), Correlation (ensuring the information from multiple sensors seeing a threat relates to the same object), System Track (creating a single engageable track of a threat from multiple reports provided by different land, sea, and space based multiple sensors), Discrimination (identifying object details to determine the target from debris or decoys), Battle Management (combining the best sensors and shooters to ensure the highest probability of a kill), Hit / Kill Assessment (determining if the target selected was destroyed after missile impact), and Communications (providing the worldwide connection of sensors and shooters to command authorities). Unifying Missile Defense Functions (UMDFs) are implemented across the Ballistic Missile Defense System (BMDS) elements to create and utilize system level data and decisions that enable Combatant Commanders the ability to automatically and manually optimize sensor coverage and interceptor inventory to defend against all ranges of ballistic threats.

MDA Element testing is based on an integrated, comprehensive, and phased test program. Element systems, subsystems, and components are tested early in development and are necessary prior to conducting BMD-System level testing. THAAD Element Level testing is reflected in this Program Element (PE). This PE also provides THAAD participation in the consolidated MDA-wide System Test Program and the resources for the planning, design, execution, and management of THAAD in BMD System testing in accordance with the BMDS Test Policy. This applies to all Flight, Integrated Ground, and Distributed Ground Tests and Post-test analysis and reconstructions listed in the Integrated Master Test Plan (IMTP). The THAAD investment in compliance with the IMTP across the three projects (BX07, EX07, MD07) is as follows (\$M): FY 2010- \$139.4; FY 2011- \$138.7; FY 2012- \$149.0; FY 2013- \$145.1; FY 2014- \$172.3 FY 2015- \$200.1; TOTAL- \$944.6.

The THAAD element integrates five major components (Interceptors, Launchers, Army Navy/Transportable Radar Surveillance - Type 2 (AN/TPY-2) Radars, THAAD Fire Control and Communication (TFCC), and THAAD-Peculiar Support Equipment) into the 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 the 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 engagement planning, fire control, coordination, execution, and communications necessary to fulfill the THAAD mission in a coherent and fully integrated fashion. It is interoperable with C2BMC and external air and missile defense and intelligence systems and agencies that are integrated into the BMDS.

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<p>The Arrow system (developed jointly by the U.S. and Israel), another of the TDS` mission area investments, 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. Project WX26 is only applicable to FY 2009.</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 that enhances its capabilities against evolving regional threats. The program also includes the development of Arrow co-manufacturing capability, co-production of the interceptor, and 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 significant ballistic missile threats. Related Arrow activities include the Caravan Flight test campaign in the U.S., the Israeli Test Bed (ITB), and studies via the Israeli Systems Architecture and Integration (ISA&I) effort that assess Arrow`s performance relative to existing and emerging threats. Finally, the next phase of development for the Arrow Weapon System is being studied to provide Israel with an indigenous upper-tier system. This is applicable to only FY 2009.</p> <p>A new joint cooperative program with Israel is the David`s Sling Weapon System (DSWS) (FY 2009 only) that is intended for Short Range Ballistic Missile Defense (SRBMD). This system is designed to counter short range rockets and serve as a low-tier to the Arrow Weapon System. This system is being designed and developed as a Joint system to meet both Israeli and U.S. requirements.</p> <p>Research, Development, Test & Evaluation (RDT&E):</p> <p>The THAAD element contributes to the Ballistic Missile Defense System (BMDS) by providing a capability for THAAD Interceptor to engage on Army Navy/ Transportable Radar Surveillance-Type 2 (AN/TPY-2) (THAAD Mode). When integrated into the BMDS with the BMDS Command and Control/Battle Management and Communications (C2BMC), AEGIS BMD and PATRIOT Systems, the rapidly deployable THAAD element improves the Ballistic Missile Defense Systems (BMDS) overall effectiveness by engaging threat ballistic missiles in the late mid-course and terminal phases of their trajectory.</p> <p>Baseline Capability Development (BCD) (THAAD 1.0) (formerly Block 2.0) and Sustainment: THAAD incremental 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 initial</p>		

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<p>phase allows other BMDS Elements with Link 16 compatibility (AEGIS BMD, PATRIOT) the capability to conduct engagement coordination with THAAD. THAAD development will evolve to achieve a more robust radar discrimination, improved fire control and launcher capabilities that facilitate communications within BMDS, and forward based engagement coordination with other BMDS elements. THAAD development also provides additional capability for other BMDS elements such as the SM-3 Launch on AN/TPY-2 (THAAD Mode) Radar. Flight tests began in FY 2006 and completes in FY 2011. The THAAD element has on multiple occasions demonstrated the ability to support the objective for putting the BMDS on alert. BCD is the foundation for the acquisition and delivery of two THAAD Batteries to support operational assessment and fielding of a BMDS capability useful to the combatant commanders. The delivery of Batteries #1 and #2 consists of a basic load of 48 Interceptors, 6 Launchers, two AN/TPY-2 (THAAD Mode) Radars (one funded in the Sensors Program) and two THAAD Fire Control and Communications (TFCCs), consisting of four Tactical Support Groups (TSGs).</p> <p>Common threat engineering produces common and consistent adversary trajectory and signature data to enable Ballistic Missile Defense (BMD) System and sub-system concept and requirements, design, verification, and assessment. Common Threat data is contained in the Adversary Capability Document (ACD) and Adversary Data Packages (ADP) and drives BMDS ground tests, flight tests, digital simulations, and pre-mission analysis activities. It is also used to develop the BMD System Description Document and BMD System Specification.</p> <p>Advanced Capability Development (ACD) (formerly Block 5.0) and Sustainment: ACD 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. ACD lays the foundation for the capability to launch THAAD interceptors using data from other BMDS sensor elements, an expansion of the THAAD element`s capability to provide THAAD sensor data to the BMDS in support of the UMDF. ACD initiates incorporation of integration of the BMDS Command and Control/Battle Management and Communications (C2BMC) communications, improved track correlation and engagement coordination with the BMDS, and the ability to launch THAAD interceptors based on system track and data from the BMDS Command and Control/Battle Management and Communications (C2BMC). This enhanced BMDS C2BMC interface enables the THAAD Interceptor Launch on BMD System Track capability. These enhancements are included in BMDS Integrated Build D development also includes the added capability to conduct Concurrent Test, Training, and Operations and continued participation in BMDS Integrated System Ground and Flight tests. Sustainment continues the field support and contractor logistics support for fielded Battery hardware. Beginning in FY 2011, ACD activities are included in project MD07.</p> <p>Modeling and Simulation (Ballistic Missile Defense System (BMDS) & Program):</p>		

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The BMD Digital Simulations Architecture (DSA) is the primary Modeling and Simulation (M&S) System framework used to integrate Element baselines prior to flight or ground testing, facilitate technical trade-offs, concept analysis and trade studies, as well as providing support to Wargames and exercises within the BMDS Program. The DSA-performance architecture and Element and component high fidelity models support PA events, which provide critical system level performance data relative to all elements, system engineers, M&S developers, the OTA and Warfighters. The DSA-virtual architecture supports Element baseline integration, training, portions of ground testing and exercises.

The BMD Single Stimulation Framework (SSF) utilizes Hardware-in-the-Loop (HWIL) assets to support primarily Ballistic Missile Defense System (BMDS) ground testing, pre and post flight test mission construction and reconstruction, portions of the training capability, Wargames, exercises and BMDS contingency studies, as well as various other use cases to enable BMDS performance in a simulated environment. Each BMDS Element supports the M&S Program by providing HWIL representations ready for integration into the BMDS system-level framework to support full-envelope BMDS ground test, flight test, and training events based upon Agency and Warfighter needs.

The THAAD element will support the BMDS HWIL Modeling and Simulation Program by providing and integrating into the BMDS system-level HWIL single stimulation framework to support full-envelope BMDS ground test, flight test, and training events based upon Agency and warfighter needs.

THAAD's Models and Simulations efforts are focused on Development, Verification, Validation and Accreditation (VV&A) Goals. In most cases, actions in support of these goals are conducted in parallel. Three major efforts are planned in support of Model and Simulation Development goals: (1) Continue efforts with the Integrated Simulation and Tactical Software (ISTS) model, ensuring that the Simulation is current and THAAD Flight Test Compliant and can serve as a tool for risk reduction and prediction of THAAD flight testing. (2) Maintain Hardware-in-the-Loop facility keeping pace with both hardware and software changes to support the THAAD participation in the MDA Flight Test Program, (3) Continue hardware and software development for the Simulation-Over-Live Driver (SOLD), a THAAD tool in the Missile Defense System Exercises that supports the MDA BMDS Ground Test Campaign. THAAD's development work in support of its VV&A Goals are focused on data reduction and analysis from both the MDA BMDS Ground Test Campaign and Flight Testing to ensure that the models used remain anchored with actual system performance data.

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THAAD will support System Pre Flight predictions for each system level flight test using the test framework set up with the BMDS configuration for a particular flight test. This provides the confidence in flight test execution by predicting element performance and exercising element interfaces. This work is also used to proof out the construct of the flight test to ensure if the required data and data management plan will support System Post Flight Reconstruction objectives. System Post Flight Reconstruction (SPFR) will use a Hardware-in-the-Loop (HWIL) and/or a Digital Modeling and Simulation (M&S) Environment to replicate the day of flight for the Ballistic Missile Defense System (BMDS) configuration, modified to represent the actual environmental conditions and target dynamics observed in flight. The results of this testing are used to increase confidence in the models and simulations by anchoring the results with emphasis on the Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) back to the real world event. System Post Flight Reconstruction (SPFR) is used for validation (anchoring) of models and simulations. The CECs/EMEs shape and focus flight and ground tests within Test Campaigns. The net effect of this rigorous M&S accreditation is the effective operationalization of BMDS RDT&E technical capabilities by the Warfighter. Credibly quantifying BMDS capabilities and limitations, and making informed capability acceptance and employment decisions in relation to Warfighter Operations Plans (OPLANs) and Concept Plans (CONPLANs) is the goal.

There are 23 CECs and EMEs and a total of 530 possible collection opportunities for the verification, validation and accreditation (VV&A) of modeling and simulation (M&S) during flight and ground tests for the THAAD Element documented in the Integrated Master Test Plan (IMTP). The percentage of test opportunities completed at the beginning and end of each fiscal year is as follows:

FY 2009: % Complete: Beginning- 11%; Ending- 14%
FY 2010: % Complete: Beginning- 14%; Ending- 28%
FY 2011: % Complete: Beginning- 28%; Ending- 42%

The CECs/EMEs acquired in FY 2009, FY 2010, and FY 2011 are accomplished through flight and ground test events, which will build additional confidence in THAAD Models and Simulations. Specific CECs/EMEs for each flight/ground test for THAAD are listed in the latest version of the BMDS Integrated Master Test Plan (IMTP).

THAAD goals are:

- Develop, test, verify, field and manufacture THAAD capability
- Continue component development to enhance integrated BMDS capability; support the Unifying Missile Defense Function (UMDF) for Engagement, Coordination, Sensor Registration, System Track, Hit/Kill Assessment and Communications
- Test and verify enhanced integrated Ballistic Missile Defense System (BMDS) Component Capability in an increasingly complex BMDS test program
- In partnership with the Army, provide, field and sustain THAAD capability for Operational Testing and BMDS operations

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Provide Quality Safety Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety, and reliability
Integrate THAAD into the BMDS International Strategy

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	956.686	719.465	0.000	0.000	0.000
Current President's Budget	951.414	715.732	436.482	0.000	436.482
Total Adjustments	-5.272	-3.733	436.482	0.000	436.482
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		-3.733			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	8.942	0.000			
• SBIR/STTR Transfer	-14.214	0.000			
• Other Adjustment Detail	0.000	0.000	436.482	0.000	436.482

Change Summary Explanation

FY 2009 decreases were a result of SBIR/STTR transfer and other MDA adjustments.
No FY 2011 data provided in PB10.

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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
<i>BX07: Terminal High Altitude Area Defense (THAAD) Block 2.0</i>	728.934	552.113	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	1,281.047
Quantity of RDT&E Articles	12	30	0	0	0	0	0	0	0		

Note

Beginning in FY 2009 the cost associated with the manufacture of AN/TPY-2 is represented under the Sensors Program. Project BX07 will end after FY 2010.

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 THAAD element provides the capability for the THAAD Interceptor to engage ballistic missiles using the Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) (THAAD Mode). THAAD enhances the TDS by deepening, complementing, and extending the BMDS battle-space and capability to engage ballistic targets in the late mid-course and terminal phases of their trajectory. THAAD will also perform a sensor surveillance mission, providing sensor data to cue other elements of the BMDS. THAAD, in conjunction with the fielded PATRIOT System, provides the TDS and supports the objective of enhancing the BMDS capability. Five major components (Interceptors, Launchers, AN/TPY-2 (THAAD Mode) Radar, THAAD Fire Control and Communication (TFCC), and Peculiar Support Equipment) will be integrated into the THAAD element and the BMDS.

THAAD Baseline Capability Development (BCD) (THAAD 1.0) began with the design and development of a significant, fundamental capability against short to medium-range Ballistic Missiles 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 (THAAD Mode) Radar with Initial Discrimination Capability; and (3) TFCC with tactical digital information link and defense design planner. The initial phase of development laid the foundation for the capability of other BMDS Elements (AEGIS, Ground Missile Defense, PATRIOT) to interoperate and conduct engagements with THAAD data via Link-16.

THAAD development evolves to achieve a more robust AN/TPY-2 (THAAD Mode) Radar discrimination, salvo firing doctrine, and the ability to operate in a full spectrum of tactical interceptor environments and survivability. To facilitate tactical 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 sets with the BMDS as well as forward based engagement coordination with other BMDS elements. THAAD development provides additional capability for other BMDS elements. BCD flight tests began in FY 2006 and complete in FY 2011. THAAD on multiple occasions demonstrated the ability to support BMDS on alert. The THAAD element will support coordinated engagements with the BMDS via the Ballistic Missile Defense System (BMDS) Command and Control/Battle Management and Communications (C2BMC). BCD

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culminates in demonstrated THAAD capabilities both inside and outside the atmosphere. BCD is the foundation for the acquisition and delivery of THAAD Batteries #1 and #2 to support operational assessment and fielding of a BMDS capability useful to the Combatant Commanders. The delivery of Batteries #1 and #2 consists of a basic load of 48 Interceptors, six Launchers, two AN/TPY-2 (Terminal Mode) Radars (provided by the Sensors Directorate) and two TFCCs consisting of 4 Tactical Support Groups (TSGs) total.						
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Batteries #1 and #2 See Description Below <i>FY 2009 Accomplishments:</i> Batteries #1 and #2 will include a basic load of 48 Interceptors, six Launchers (1 provided by the development contract), two Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) (THAAD Mode) Radars (provided by Sensors Directorate), 4 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) (2 provided by the development contract), the required Peculiar and Common Support Equipment, and two Interceptors for flight test (provided to development contract). Delivery of Battery hardware will begin in FY 2009. Following operational testing, the Batteries will be fielded to the Army. Delivered two TFCC TSGs, two Launchers Continued the fabrication and assembly of initial spares Completed fielding of Battery #1 to US Army 11th Brigade, Alpha Battery 4th Air Defense Regiment Initiated the fabrication and assembly of Battery Support Center (BSC) Initiated the fabrication and assembly of Interim Contractor Support System (ICSS) Conducted Ground Test Element Integration Checkout (EICO) for Battery 1 Completed 24/Missile Round Trainers (MRTs) 16 weighted and 8 un-weighted <i>FY 2010 Plans:</i> Deliver three Launchers Deliver 25 Interceptors and 1 flight test vehicle	193.594	187.873	0.000	0.000	0.000	

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT BX07: <i>Terminal High Altitude Area Defense (THAAD) Block 2.0</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Complete BSC #2 Complete ICSS #2 <i>FY 2011 Base Plans:</i> All Batteries #1 and #2 activities transition to project MD07 in FY 2011 <i>FY 2011 OCO Plans:</i> NA						
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar See Description Below <i>FY 2009 Accomplishments:</i> The AN/TPY-2 (THAAD Mode) Radar is a solid state, phased array radar capable of tracking multiple threats and multiple interceptors during engagements. The 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 radar hardware is a transportable system composed of the Antenna Equipment Unit, Electronics Equipment Unit, Cooling Equipment Unit, and the Prime Power Unit (PPU). Beginning in FY 2009, the manufacturing cost associated with the AN/TPY-2 (THAAD Mode) Radars for THAAD Batteries are provided for under the Sensors Program Element. Continued to support the flight test program at Pacific Missile Range Facility (PMRF) Completed development of Radio Frequency Scene Generation capability to test advanced algorithms ** Completed Formal Release of tactical software Build 4.2.4 Completed two Prime Power Units (PPUs)		78.202	50.397	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Continued to support Government Ground Testing (GGT) Supported planning, integration, and analysis of the Foreign Exercise Provided mission support during contingency operations at PMRF</p> <p>** This constitutes the ;Ballistic Missile Defense System (BMDS) Integrated Build C capability associated with Improved THAAD Discrimination</p> <p><i>FY 2010 Plans:</i> Continue to support the flight test program at Pacific Missile Range Facility (PMRF) Support transition of flight test program to Reagan Test Site (RTS) Continued to maintain Formal Release of Software Build 4.2.4 Complete Government Ground Testing Provide technical support to fielding of THAAD Battery #1 to the Army at Force Development Experimentation (FDE) and Limited User Test (LUT) and THAAD participation in the Foreign Exercise</p> <p><i>FY 2011 Base Plans:</i> All AN/TPY-2 Radar activities transition to project MD07 in FY 2011</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>System Test See Description Below</p> <p><i>FY 2009 Accomplishments:</i> THAAD System Test is responsible for developing and executing all aspects of the THAAD program flight test objectives, ballistic interceptor target solutions, Live Fire Test and Evaluation (LFT&E)</p>		152.143	92.821	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>** THAAD will demonstrate Multi-Target Engagement capability using Simulation-Over-Live-Driver (SOLD) and an intercept test against multiple targets</p> <p>*** CEC/EMEs are the conditions and events where data is obtained from flight and ground test in order to anchor models and simulations</p> <p><i>FY 2011 Base Plans:</i> All System Test activities transition to project MD07 in FY 2011</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Weapon Sys Engr & Integ Team (WSEIT)</p> <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> WSEIT is responsible for all engineering efforts required to translate approved Ballistic Missile Defense System (BMDS) capabilities and requirements into operationally suitable THAAD capability; coordinating and conducting implementation of the Unifying Missile Defense Function (UMDF), 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 Product Team (IPT) process on a balanced contractor-government team. Additionally, THAAD WSEIT is responsible for all aspects of risk management system security and information assurance for the THAAD program.</p> <p>Continued to support the flight test program at Pacific Missile Range Facility (PMRF) Conducted pre-flight testing in the System Integration Laboratory (SIL) Hardware-in-the Loop (HWIL) facility</p>		64.837	55.442	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>* Simulation-Over-Live Driver (SOLD) is an enabling activity to demonstrate THAAD`s Multi-Target Engagement capability on FTT-11 and FTT-12 (THAAD Intercept Flight Tests)</p> <p><i>FY 2011 Base Plans:</i> All WSEIT activities transition to project MD07 in FY 2011</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Interceptor See Description Below</p> <p><i>FY 2009 Accomplishments:</i> The THAAD Interceptor is a certified round that is propelled by a single-stage, solid-propellant rocket booster. The kill vehicle (KV) possesses a Divert and Attitude Control System (DACs) and an infrared Seeker used to destroy its target through hit-to-kill technology.</p> <p>Continued production and delivery of interceptors to support ground and flight testing Continued successful interceptor ground test program to verify missile requirements and support Materiel Release Review Board (MRRB) data requirements Performed interceptor safety tests Supported Insensitive Munitions/Final Hazard Classification (IM/FHC) testing Initiated stockpile reliability test program Continued flight test activities to include performance risk assessment, Hardware-in-the-Loop (HWIL) preflight analysis, onsite flight support and post flight analysis Delivered Interceptor for cold conditioning in support of first salvo mission Continued assembly qualification and delta qualification test activities Initiated Battery Interceptor production assembly</p>		53.014	56.513	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Continue support Battery Interceptor production assembly Complete FSA design changes Support post deployment software development Support planning and execution of Ballistic Missile Defense System (BMDS) Integration tests to ensure missile performance optimizes overall BMDS performance Evaluate missile performance against real world scenarios and potential threats Coordinate and resolve performance shortfalls discovered during ground test program leading up to materiel release Perform assembly design changes and conduct re-qualification testing Initiate procurement of Flight Sequencing Assembly (FSA) to conduct required Ignition System Safety Review Board (SSRB) testing of optical block design Initiate development and fabrication of test instrumentation kits to support BMDS flight tests Continued development of the Missile Stockpile Test Set Prepared documentation/reports for government approval and submission to Materiel Release Review Board Refurbish 2 BQT interceptors and support government ground safety tests Initiate procurement of additional Range Safety Instrumentation Safety (RSIS) kits Continue Batteries #1 and #2 ;obsolescence efforts</p> <p><i>FY 2011 Base Plans:</i> All Interceptor activities transition to project MD07 in FY 2011</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
Integrated Logistics Support (ILS) See Description Below		48.154	22.108	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Provide technical support to fielding of THAAD Battery #1 to the Army at Force Development Experimentation (FDE) and Limited User Test (LUT) and THAAD participation in the Foreign Exercise Begin implementation of the Fire Control Obsolescence resolution for hardware, software and GFI (Common Message Processor (CMP), Common User Interface (CUI), Common Data Link Interface Module (CDLIM) for future Batteries</p> <p>Conduct and begin implementation of Post Deployment Software Support (PDSS) Planning and Analysis to incorporate THAAD Fire Control and Communication (TFCC) soldier capabilities, approved Link-16 interface change proposals/MIL-STD-6016D extracts, prioritized/partnered Change Requests, and correlation Interoperability improvements into the first PDSS Engineering Build</p> <p>Upgrade the TFCC development environments to Solaris 10 and TFCC SW Build 5.2</p> <p>Supported the Integrated Operational Capability Demonstration</p> <p><i>FY 2011 Base Plans:</i> All TFCC activities transition to project MD07 in FY 2011</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Launcher</p> <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> 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.</p> <p>Delivered two Launchers and Mechanical Prototype for Collective Training Delivered one Launcher for Battery #1</p>		18.069	7.715	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Supported System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) integration activities of hardware and software</p> <p>Continued Support flight testing at Pacific Missile Range Facility (PMRF)</p> <p>Continued Carrier Electronics Module (CEM) Qualification Testing</p> <p>Completed Software Build 4.02.02 to support maintainability demonstration</p> <p>Initiated Concurrent Missile/Launcher Electromagnetic Environmental Effect (E3) Government Ground Testing</p> <p>Completed Launcher Mobility Ground Testing</p> <p>Initiated Launcher Environmental Government Ground Testing</p> <p>Provided mission support during contingency operations at PMRF</p> <p><i>FY 2010 Plans:</i></p> <p>Complete Carrier Electronics Module (CEM) Qualification Testing</p> <p>Continue to support the flight test program at PMRF</p> <p>Continue to support System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) integration activities of hardware and software in preparation of flight test</p> <p>Complete Concurrent Missile/Launcher Electromagnetic Environmental Effects (E3) Government Ground Testing</p> <p>Complete Launcher Mobility Government Ground Testing</p> <p>Provide technical support to testing of THAAD Battery #1 by the Army during Force Development Experimentation (FDE) and Limited User Test (LUT)</p> <p>Complete Software Build 4.02 update to support Force Development Experimentation (FDE) and Limited User Test (LUT)</p> <p>Complete Launcher obsolescence redesign</p> <p><i>FY 2011 Base Plans:</i></p> <p>All Launcher activities transition to project MD07 in FY 2011</p>						

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> NA						
Program Management See Description Below <i>FY 2009 Accomplishments:</i> Program Management provides support functions across the program such as strategic planning, program integration, cost estimating, contracting, and financial management which includes 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. ;Additionally, THAAD program Management is responsible for all aspects of risk management for the THAAD program. Provided additional management, leadership, and planning for all BCD activities Provided additional salaries, travel, training, and supplies Continued to provide project-wide programmatic support Provided programmatic support during contingency operations at Pacific Missile Range Facility (PMRF) <i>FY 2010 Plans:</i> Provide management, leadership, and planning for all BCD activities Provide salaries, travel, training, and supplies Continue to provide project-wide programmatic support <i>FY 2011 Base Plans:</i> All Program Management activities transition to project MD07 in FY 2011		47.339	19.344	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> NA						
Common Threat See Description Below <i>FY 2009 Accomplishments:</i> Threat Systems Engineering supports the planning, design and specification, integration and implementation, and test verification and assessment phases of the systems engineering process. The Threat Systems Engineering uses intelligence community data to define the BMDS threat space and directly supports the development of the BMD System Description Document and System and Element Specifications. This threat space is documented in the Adversary Data Packages (ADP), which includes common and consistent representation of Missile Systems and countermeasures to drive BMDS requirements, designs, and directly supports the execution of Integrated Master Test Plan (IMTP) (i.e. flight test targets, ground tests & digital simulations, and pre-mission analysis). Threat Systems Engineering also develops scenarios (trajectory and signature) for system and element utilization for compliance and assessment evaluations of BMDS capability to defend homeland, deployed forces, and friends and allies. Developed an agency-wide Common Threat baseline in support of BMDS design, verification, and assessment Completed the BMDS Integrated Build D ADP update to document adversary missile capabilities and characterizations consistent with projected threat environment for the BMDS Produce all the threat definition and scenario data required to support the BMDS Integrated Master Test Plan, including several Flight Tests Ground Test BMDS Ground Test 03 (GT-03), BMDS Performance Assessment 09 (PA-09), FY 2009 war games and exercises ;and the implementation of Improved BMDS discrimination		2.467	1.185	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Produced scenario data to support Element and Component design and assessment for BMDS Integrated Build D, Aegis BMD 5.1, and Far Term Sea-based Terminal</p> <p>Developed threat data for special projects</p> <p>Validated that BMDS test targets are threat representative (FTM-15, FTG-06, FTT-10a)</p> <p><i>FY 2010 Plans:</i></p> <p>Maintain and update the agency-wide Common and consistent BMDS threat</p> <p>Continue to update adversary missile capabilities and characterizations consistent with projected threat environment for BMDS Builds</p> <p>Produce all the threat definition and scenario data required to support the BMDS Integrated Master Test Plan, including several Flight Tests Ground Test (GTX-04b, GTX-04c), BMDS Performance Assessment 2009 (PA-09) Technical Assessment 2010 (TA-10), and FY 2010 war games and exercises</p> <p>Produce scenario data to support Element and Component analysis of alternatives, requirements development, design and assessment for BMDS Integrated Build D updates and all phases of the Phased Adaptive Approach (PAA) including: THAAD, Precision Tracking Space System (PTSS), Air-Borne Infra-Red (ABIR), Aegis BMD Ashore, Aegis BMD 5.1, Far Term Sea-based Terminal, Early Intercept, TPY-2, and C2BMC. Space Tracking and Surveillance System (STSS).</p> <p>Develop threat data for special projects</p> <p>Validate BMDS test targets are threat representative (JFTM-03, FTG-06, FTT-11, FTT-12)</p> <p><i>FY 2011 Base Plans:</i></p> <p>N/A</p> <p><i>FY 2011 OCO Plans:</i></p> <p>NA</p>						
Modeling and Simulations - TH Block 2.0 Development-Hardware-in-the-loop (HWIL)		0.000	34.145	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)															
<table border="1"> <thead> <tr> <th>FY 2009</th> <th>FY 2010</th> <th>FY 2011 Base</th> <th>FY 2011 OCO</th> <th>FY 2011 Total</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total					
FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total											
<p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> NA</p> <p><i>FY 2010 Plans:</i> The THAAD element will support the BMDS Hardware-in-the-Loop (HWIL) Modeling and Simulation Program by providing and integrating into the BMDS system-level HWIL single stimulation framework to support full-envelope BMDS ground test, flight test, and training events based upon Agency and warfighter needs. BMDS HWIL provides development, integration, and test funding to both MDA and non-MDA Elements participating in the BMDS ground test campaigns. BMDS HWIL also provides the core Lethality and Phenomenology models for use in analysis and BMDS and Element mission requirements. BMDS HWIL additionally maintains the Advanced Research Center and Simulation Center High Performance Computing Capabilities to support test and Modeling and Simulation (M&S) requirements across MDA.</p> <p>Continue to develop, integrate, and test a common Ballistic Missile Defense (BMDS) HWIL stimulation framework with the Elements for the GTI-04, GTD-04 ground tests Conduct BMDS HWIL stimulation framework Verification and Validation (V&V) for BMDS GTI-04 and GTD-04 ground tests Define and plan for enhancement to the Single Stimulation Framework (SSF) required for execution of the GT-05 campaign to include identification of interdependencies required for execution Provide development, Operations and Maintenance, and Independent V&V of standardized phenomenology and lethality tools and models for the common environmental toolset Provide support to integrate common Radar Digital Signal Injection System (RDSIS) for X-Band radars. Evolve and enhance the SSF to provide increased Warfighter support, specifically Training and Exercises</p>															

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Integrate the SSF with additional Allied/Coalition elements to expand Distributed Ground Test and Exercise venues</p> <p>Initiate the technical integration of the SSF with the Digital Stimulation Architecture</p> <p>Product Line development, sustainment, maintenance and product support for HWIL products</p> <p>Plan, develop, integrate and test a common Ballistic Missile Defense System (BMDS) Hardware-in-the-Loop (HWIL) stimulation framework with the Elements for the GTX, GTI, GTD ground tests, Active Layered Theatre Ballistic Missile Defense (ALTBMD) exercises, Assured Response (AR) exercises, Foreign Exercises, Near-Term Discrimination (NTD) excursions tests, and Concurrent Test, Training, and Operations (CTTO) demos</p> <p>Conduct BMDS HWIL stimulation framework V&V for BMDS GTX, GTI, GTD ground tests, ALTBMD exercises, Assured Response (AR) exercises, Foreign Exercises, and Concurrent Test, Training and Operations (CTTO) demos</p> <p>Provide systems engineering support to upgrade the BMDS stimulation framework to support wideband debris for BMDS sensors</p> <p>Initiate integration of the BMDS stimulation framework with the additional sensors; provide common threat representations and scenarios to meet specific event and customer requirements for BMDS HWIL Framework</p> <p><i>FY 2011 Base Plans:</i> All Models and Simulations activities transition to project MD07 in FY 2011</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
MDA Infrastructure See Description Below		47.163	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> Provided Quality Safety Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability Continued to provide dedicated Information Technology service for mission specific research and test efforts to include classified and unclassified networks</p> <p><i>FY 2010 Plans:</i> N/A</p> <p><i>FY 2011 Base Plans:</i> N/A</p> <p><i>FY 2011 OCO Plans:</i> NA</p>					
Accomplishments/Planned Programs Subtotals	728.934	552.113	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.922
• 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i>	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869

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0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)			PE 0603881C: Ballistic Missile Defense Terminal Defense Segment				BX07: Terminal High Altitude Area Defense (THAAD) Block 2.0				
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603886C: Ballistic Missile Defense System Interceptor											
• 0603888C: Ballistic Missile Defense Test and Targets	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: Ballistic Missile Defense Enabling Programs	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: SPECIAL PROGRAMS - MDA	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: BMD AEGIS	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: SPACE TRACKING & SURVEILLANCE SYSTEM	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: MULTIPLE KILL VEHICLE	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: REGARDING TRENCH	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: SEA BASED X-BAND RADAR (SBX)	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT BX07: <i>Terminal High Altitude Area Defense (THAAD) Block 2.0</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>											
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: <i>BMD EUROPEAN CAPABILITY</i>	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
• 0604880C: <i>LAND-BASED SM-3</i>	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management Headquarters-MDA</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

D. Acquisition Strategy

The THAAD Baseline Capability Development (THAAD 1.0) program is a Sole Source Cost Plus Award Fee (CPAF) contract awarded August 4, 2000. The Batteries #1 and #2 contract is a Sole Source, CPAF/Cost Plus Incentive Fee (CPIF) contract awarded on December 22, 2006 to procure Interceptors, Launchers, THAAD Fire Control and Communication and Peculiar Support Equipment hardware.

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	BX07: <i>Terminal High Altitude Area Defense (THAAD) Block 2.0</i>

The MDA and THAAD Baseline Capability Development Hardware-in-the-Loop (HWIL) program utilizes competitively awarded CPAF/CPIF service and product development contracts. The Army's Research, Development, and Engineering Center (RDEC) Echelon 3 Engineering Activity provides direct Systems Engineering support and contractor oversight.

E. Performance Metrics

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

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Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Batteries #1 and #2 Lockheed Martin 9 BX07	SS/CPIF	LMSSC Sunnyvale, CA & Huntsville, AL; NM & HI	382.594	187.873		0.000		0.000		0.000	0	570.467	570.467
Batteries #1 and #2 Raytheon BX07	SS/CPIF	Raytheon Wolburn, MA; Huntsville, AL	56.000	0.000		0.000		0.000		0.000	0	56.000	56.000
Army Navy/ Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar Lockheed Martin 5 BX07	SS/CPAF	Raytheon Bedford, MA	222.002	50.397		0.000		0.000		0.000	0	272.399	272.399
System Test Lockheed Martin 7 BX07	SS/CPAF	LMSSC Sunnyvale, CA; Huntsville, AL; NM & HI	155.320	17.395		0.000		0.000		0.000	0	172.715	172.715
Weapon Sys Engr & Integ Team (WSEIT) Lockheed Martin 8 BX07	SS/CPAF	LMSSC Sunnyvale, CA & Huntsville, AL	55.032	13.980		0.000		0.000		0.000	0	69.012	69.012
Interceptor Lockheed Martin 4 BX07	SS/CPAF	LMSSC CA, TX, AL, MA, NH, IL, FL & MD	116.503	47.308		0.000		0.000		0.000	0	163.811	163.811
Integrated Logistics Support (ILS) Lockheed Martin 2 BX07	SS/CPAF	LMSSC Huntsville, AL	60.055	6.340		0.000		0.000		0.000	0	66.395	66.395
THAAD Fire Control and Communication (TFCC)	SS/CPAF	LMSSC and Raytheon	44.458	13.006		0.000		0.000		0.000	0	57.464	57.464

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Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Tactical Station Groups (TSGs) Lockheed Martin 3 BX07		Huntsville, AL											
Launcher Lockheed Martin 6 BX07	SS/CPAF	LMSSC Huntsville, AL, Camden, AK, Dallas & Lufkin, TX	17.209	4.064		0.000		0.000		0.000	0	21.273	21.273
Program Management Lockheed Martin 1 BX07	SS/CPAF	LMSSC/ Sunnyvale, CA Huntsville, AL	47.356	10.079		0.000		0.000		0.000	0	57.435	57.435
Common Threat - BX07	Various/ Various	- -	2.467	1.185		0.000		0.000		0.000	0	3.652	3.652
Modeling and Simulations - TH Block 2.0 Development- Hardware-in-the-loop (HWIL) Teledyne Brown Eng BX07	Various/ Various	Teledyne Solutions Huntsville, AL	0.000	34.145		0.000		0.000		0.000	0	34.145	34.145
MDA Infrastructure - BX07	Various/ Various	- -	47.163	0.000		0.000		0.000		0.000	0	47.163	47.163
Subtotal			1,206.159	385.772		0.000		0.000		0.000	0.000	1,591.931	1,591.931

Remarks

NA

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Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Batteries #1 and #2 GFE 15 BX07	TBD/TBD	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC Ft. Monmouth, NJ; Warren, MI & Huntsville, AL	1.945	0.000		0.000		0.000		0.000	0	1.945	1.945
Batteries #1 and #2 CSE 15 BX07	TBD/TBD	Multiple to include CECOM, TACOM, & GSA Ft. Monmouth, NJ; Warren, MI & Huntsville, AL	0.000	0.000		0.000		0.000		0.000	0	0	0
Army Navy/ Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar CSS 11 BX07	C/CPFF	Multiple to include Dynetics & GA Tech Huntsville, AL & GA	2.367	0.000		0.000		0.000		0.000	0	2.367	2.367
Army Navy/ Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar OGA 11 BX07	TBD/TBD	Multiple to include CECOM, RDEC, & SMDC Ft. Monmouth, NJ & Huntsville, AL	1.598	0.000		0.000		0.000		0.000	0	1.598	1.598
Army Navy/ Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar MDA Program Support 11 BX07	Various/ Various	MDA Arlington, VA	1.420	0.000		0.000		0.000		0.000	0	1.420	1.420

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Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Test Contract Support Services (CSS) 13 BX07	C/CPFF	Multiple to include Dynetics, L3 & TSI Huntsville, AL	34.087	18.854		0.000		0.000		0.000	0	52.941	52.941
System Test OGA 13 BX07	TBD/TBD	Multiple to include WSMR, PMRF, ATEC, RDEC & SMDC NM, HI, VA & Huntsville, AL	118.920	55.516		0.000		0.000		0.000	0	174.436	175.960
System Test MDA Program Support 13 BX07	Various/ Various	MDA Arlington, VA	25.610	1.056		0.000		0.000		0.000	0	26.666	26.666
Weapon Sys Engr & Integ Team (WSEIT) Contract Support Services (CSS) 14 BX07	C/CPFF	Multiple to include Dynetics, TSA & L3 Huntsville, AL & Salt Lake City, UT	23.586	7.454		0.000		0.000		0.000	0	31.040	31.040
Weapon Sys Engr & Integ Team (WSEIT) OGA 14 BX07	TBD/TBD	Multiple to include RDEC & SMDC Huntsville, AL	24.339	14.642		0.000		0.000		0.000	0	38.981	38.981
Weapon Sys Engr & Integ Team (WSEIT) MDA Program Support 14 BX07	Various/ Various	MDA Arlington, VA	20.093	19.366		0.000		0.000		0.000	0	39.459	40.982
Interceptor CSS 10 BX07	C/CPFF	Multiple to include BAE, TSI & L3	11.627	5.959		0.000		0.000		0.000	0	17.586	17.586

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Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Huntsville, AL & Salt Lake City, UT											
Interceptor OGA 10 BX07	TBD/TBD	Multiple to include RDEC & SMDC Huntsville, AL	7.489	3.246		0.000		0.000		0.000	0	10.735	10.735
Interceptor MDA Program Support 10 BX07	Various/ Various	MDA Arlington, VA	7.263	0.000		0.000		0.000		0.000	0	7.263	7.263
Integrated Logistics Support (ILS) CSS 8 BX07	C/CPFF	Multiple to include Dynetics, TSA & BAE Huntsville, AL & Rockville, MD	11.531	8.534		0.000		0.000		0.000	0	20.065	20.065
Integrated Logistics Support (ILS) OGA 8 BX07	TBD/TBD	Multiple to include IMMC & USAADASCH Huntsville, AL & Ft. Bliss	9.328	7.234		0.000		0.000		0.000	0	16.562	16.562
Integrated Logistics Support (ILS) MDA Program Support 8 BX07	C/CPFF	MDA Arlington, VA	4.570	0.000		0.000		0.000		0.000	0	4.570	4.570
Integrated Logistics Support (ILS) GFE 8 BX07	TBD/TBD	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC	1.847	0.000		0.000		0.000		0.000	0	1.847	1.847

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Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Ft. Monmouth, NJ; Warren, MI & Huntsville, AL											
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) Contract Support Services (CSS) 9 BX07	C/CPFF	Multiple to include Dynetics, DCD & Davidson Tech Silver Spring, MD & Huntsville, AL	1.950	1.442		0.000		0.000		0.000	0	3.392	3.392
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) OGA 9 BX07	TBD/TBD	Multiple to include NRDEC, RDEC & SMDC Natick, MA & Huntsville, AL	0.817	0.143		0.000		0.000		0.000	0	0.960	0.960
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) MDA Program Support 9 BX07	Various/ Various	MDA Arlington, VA	2.613	9.979		0.000		0.000		0.000	0	12.592	12.592
Launcher Contract Support Services (CSS) 12 BX07	C/CPFF	Teledyne Solutions Huntsville, AL	1.432	0.482		0.000		0.000		0.000	0	1.914	1.914
Launcher OGA 12 BX07	TBD/TBD	RDEC & SMDC Huntsville, AL	0.495	0.340		0.000		0.000		0.000	0	0.835	0.835
Launcher MDA Program Support 12 BX07	Various/ Various	MDA Arlington, VA	3.480	2.829		0.000		0.000		0.000	0	6.309	6.309
Program Management CSS 7 BX07	C/CPFF		9.634	5.607		0.000		0.000		0.000	0	15.241	15.241

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Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Multiple to include Dynetics, BAE, & L3 Huntsville, AL; Rockville, MD & Salt Lake City, UT											
Program Management MDA Program Support 7 BX07	Various/ Various	MDA Arlington, VA	5.258	2.616		0.000		0.000		0.000	0	7.874	7.874
Program Management OGA 7 BX07	TBD/TBD	Multiple to include IMMC & USAADASCH Huntsville, AL	0.746	1.042		0.000		0.000		0.000	0	1.788	1.788
Subtotal			334.045	166.341		0.000		0.000		0.000	0.000	500.386	503.433

Remarks
NA

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Test Lockheed Martin 10 BX07	SS/CPAF	LMSSC	50.848	0.000		0.000		0.000		0.000	0	50.848	50.848

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Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Sunnyvale, CA; Huntsville, AL											
Subtotal			50.848	0.000		0.000		0.000		0.000	0.000	50.848	50.848

Remarks

NA

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks

NA

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
	1,591.052	552.113		0.000		0.000		0.000	0.000	2,143.165	2,146.212

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency **DATE:** February 2010

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	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	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
Element Logistics Demonstrations Phase 2	■	■																										
GTD-03 (Full BMDS Distributed Test)	■	■																										
Insensitive Munitions/ Hazards Testing Phase 1	■	■																										
Continue Fire Control and Comm BQT	■	■	■	■																								
AN/TPY-2 Government Ground Test (GGT) Comp	■	■	■	■																								
Launcher GGT Comp	■	■	■	■																								
Conduct FTT-10a (THAAD Operational Intercept Flight Test)		■																										
Complete Prime Power Unit (PPU) #1		■																										
Integrated Baseline Review Complete		■																										
Battery #2 Initial Hardware Delivery			■																									
Insensitive Munitions/Hazards Testing Phase 2			■	■																								
Element Logistics Demonstrations			■	■																								
Complete Prime Power Unit (PPU) #2				■																								
Interceptor Delivery for FTT-11 (THAAD Intercept Flight Test)				■																								
Battery #1 Element Integ & Checkout Complete				■																								
Element Logistics Demonstration Complete				■																								

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT BX07: <i>Terminal High Altitude Area Defense (THAAD) Block 2.0</i>
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	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	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
Battery #1 Ground Components/Battery Support Center Deliveries Complete				■																								
Launcher Build 4 S/W Formal Release Integ at SIL					■																							
Fire Control and Comm B5 S/W Formal Rel of Information Assurance					■																							
AN/TPY-2 Radar B4.2 Formal Update Rel					■																							
Conduct FTT-11 (THAAD Intercept Flight Test)					■																							
AN/TPY-2 Block Qual Test (BQT)					■	■	■																					
Launcher Block Qualification Test (BQT)					■	■	■																					
Fire Control and Comm Block Qual Test (BQT) Comp					■	■	■																					
Interceptor Block Qualification Test					■	■	■																					
Insensitive Munitions/Hazards Testing Phase 3					■	■	■	■																				
Conduct FTT-12 (THAAD Intercept Flight Test)						■																						
GTX-04a (Regional Focused HWIL Test)						■																						
Battery #1 8th Interceptor Delivery								■																				
Interceptor (1 of 2) Deliver for FTT-12 (THAAD Intercept Flight Test)							■																					
Interceptor (2 of 2) Deliver for FTT-12 (THAAD Intercept Flight Test)							■																					

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT BX07: <i>Terminal High Altitude Area Defense (THAAD) Block 2.0</i>
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	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	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
Battery #2 Ground Components/Battery Support Center Deliveries Complete						■																						
GTX-04b (Full BMDS Distributed Test)							■																					
Battery #1 Interceptor Deliveries Complete								■																				
Block Qualification Test (BQT) Completion								■																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT BX07: <i>Terminal High Altitude Area Defense (THAAD) Block 2.0</i>
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Element Logistics Demonstrations Phase 2	1	2009	2	2009
GTD-03 (Full BMDS Distributed Test)	1	2009	2	2009
Insensitive Munitions/ Hazards Testing Phase 1	1	2009	2	2009
Continue Fire Control and Comm BQT	1	2009	4	2009
AN/TPY-2 Government Ground Test (GGT) Comp	1	2009	4	2009
Launcher GGT Comp	1	2009	4	2009
Conduct FTT-10a (THAAD Operational Intercept Flight Test)	2	2009	2	2009
Complete Prime Power Unit (PPU) #1	2	2009	2	2009
Integrated Baseline Review Complete	2	2009	2	2009
Battery #2 Initial Hardware Delivery	3	2009	3	2009
Insensitive Munitions/Hazards Testing Phase 2	3	2009	4	2009
Element Logistics Demonstrations	3	2009	4	2009
Complete Prime Power Unit (PPU) #2	4	2009	4	2009
Interceptor Delivery for FTT-11 (THAAD Intercept Flight Test)	4	2009	4	2009
Battery #1 Element Integ & Checkout Complete	4	2009	4	2009
Element Logistics Demonstration Complete	4	2009	4	2009
Battery #1 Ground Components/Battery Support Center Deliveries Complete	4	2009	4	2009
Launcher Build 4 S/W Formal Release Integ at SIL	1	2010	1	2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT BX07: <i>Terminal High Altitude Area Defense (THAAD) Block 2.0</i>
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Event	Start		End	
	Quarter	Year	Quarter	Year
Fire Control and Comm B5 S/W Formal Rel of Information Assurance	1	2010	1	2010
AN/TPY-2 Radar B4.2 Formal Update Rel	1	2010	1	2010
Conduct FTT-11 (THAAD Intercept Flight Test)	1	2010	1	2010
AN/TPY-2 Block Qual Test (BQT)	1	2010	3	2010
Launcher Block Qualification Test (BQT)	1	2010	3	2010
Fire Control and Comm Block Qual Test (BQT) Comp	1	2010	3	2010
Interceptor Block Qualification Test	1	2010	3	2010
Insensitive Munitions/Hazards Testing Phase 3	1	2010	4	2010
Conduct FTT-12 (THAAD Intercept Flight Test)	2	2010	2	2010
GTX-04a (Regional Focused HWIL Test)	2	2010	2	2010
Battery #1 8th Interceptor Delivery	3	2010	3	2010
Interceptor (1 of 2) Deliver for FTT-12 (THAAD Intercept Flight Test)	2	2010	2	2010
Interceptor (2 of 2) Deliver for FTT-12 (THAAD Intercept Flight Test)	2	2010	2	2010
Battery #2 Ground Components/Battery Support Center Deliveries Complete	2	2010	2	2010
GTX-04b (Full BMDS Distributed Test)	3	2010	3	2010
Battery #1 Interceptor Deliveries Complete	4	2010	4	2010
Block Qualification Test (BQT) Completion	4	2010	4	2010

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT EX07: <i>Terminal High Altitude Area Defense (THAAD) Block 5.0</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
<i>EX07: Terminal High Altitude Area Defense (THAAD) Block 5.0</i>	0.000	60.126	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	60.126
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

A. Mission Description and Budget Item Justification

THAAD Advanced Capability Development (ACD) (formerly Block 5.0) initiates the next incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. ACD will include the capability to launch THAAD interceptors using data from other Ballistic Missile Defense System (BMDS) sensor elements and an expansion of the THAAD element's capability to provide THAAD sensor data to the BMDS in support of the Unifying Missile Defense Function (UMDF). ACD will include integration of Extremely High Frequency (EHF) communications, improved track correlation and engagement coordination with the BMDS, and the ability to launch THAAD interceptors based on system track data from the BMDS Command and Control/Battle Management and Communications (C2BMC). This enhanced BMDS C2BMC interface enables the THAAD Interceptor Launch on BMD System Track capability, which is included in BMDS Integrated Build D. Development also includes the added capability to conduct Concurrent Test, Training, and Operations and continued participation in BMDS Integrated System Ground and Flight tests. Sustainment continues the field support and contractor logistics support for fielded Battery hardware. AN/TPY-2 Radar development will be performed under the Sensors Program Element and integrated into the THAAD weapon system.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
System Test See Description Below <i>FY 2009 Accomplishments:</i> N/A	0.000	4.020	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT EX07: <i>Terminal High Altitude Area Defense (THAAD) Block 5.0</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> THAAD System Test is responsible for developing and executing all aspects of the THAAD program flight test objectives, ballistic interceptor target solutions, system flight test execution, range facility preparations, documentation requirements, data analysis and reporting.</p> <p>Develop and acquire mobile launch and test support equipment Initiate requirements definition for modification to flight test infrastructure to support Unifying Missile Defense Function (UMDF) changes and Ballistic Missile Defense System (BMDS) Ground and Flight testing Initiate support planning for BMDS Ground and Flight Test events for THAAD interoperability with other BMDS Elements</p> <p><i>FY 2011 Base Plans:</i> All System Test activities transition to project MD07 in FY 2011</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Weapon Sys Engr & Integ Team (WSEIT) See Description Below</p> <p><i>FY 2009 Accomplishments:</i> N/A</p> <p><i>FY 2010 Plans:</i> Responsible for all engineering efforts required to translate approved Ballistic Missile Defense System (BMDS) capabilities and requirements into the THAAD capability. Activities include coordination and requirements analysis, system integration and verification, software engineering to include</p>		0.000	29.394	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Initiate the integration and implementation of THAAD and its components in the BMDS through participation in MDA Ground Test Campaign and Combatant Commander (COCOM) war games, and exercises, as well as Performance Assessments</p> <p>Initiate the design, development, and integration of hardware and software to combine the capability of Simulation-Over-Live-Drive (SOLD), Concurrent Test, Training and Operation (CTTO), and Distributed Multi-Echelon System (DMeTs) into a concurrent test training and operations capability</p> <p>* These enabling activities will allow delivery of the THAAD Launch on BMDS System Track capability.</p> <p><i>FY 2011 Base Plans:</i> All WSEIT activities transition to project MD07 in FY 2011</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)</p> <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> N/A</p> <p><i>FY 2010 Plans:</i> The THAAD Fire Control and Communication (TFCC) is composed of two Tactical Station Groups (TSGs). Each TSG consists of a Tactical Operations Station, a Launch Control Station, and a Station Support Group. The TFCC provides the platform for Ballistic Missile Defense System (BMDS) Unifying Missile Defense Functions (UMDFs) and planning, control, coordination, execution, and</p>		0.000	14.181	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> N/A</p> <p><i>FY 2010 Plans:</i> The Terminal High Altitude Area Defense (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.</p> <p>Provide engineering support to incorporate advanced capabilities into the current Launcher design</p> <p><i>FY 2011 Base Plans:</i> All Launcher activities transition to project MD07 in FY 2011</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Program Management</p> <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> N/A</p> <p><i>FY 2010 Plans:</i> Program Management provides procurement support function across the program such as strategic planning, program integration, cost estimating, contracting, and financial management which includes</p>		0.000	3.717	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT EX07: <i>Terminal High Altitude Area Defense (THAAD) Block 5.0</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>preparation of financial statements, reimbursement of financial services provided by Defense Finance Accounting Service (DFAS), internal review and audit, earned-value management, and program assessment.</p> <p>Provide management, leadership, and planning for all Advance Capability Development activities Provide support to the Advance Capability Development System Requirements Review (SRR) Provide salaries, travel, training, and supplies Continue to provide project-wide programmatic support</p> <p><i>FY 2011 Base Plans:</i> All Program Management activities transition to project MD07 in FY 2011</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>MDA Infrastructure(QS, DEP, DEE, DOB)</p> <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> N/A</p> <p><i>FY 2010 Plans:</i> Provide Quality Safety Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability Provide dedicated Information Technology service for mission specific research and test efforts to include classified and unclassified networks</p>		0.000	7.314	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT EX07: <i>Terminal High Altitude Area Defense (THAAD) Block 5.0</i>
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B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> N/A					
<i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	0.000	60.126	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.922
• 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i>	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: <i>Ballistic Missile Defense System Interceptor</i>	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: <i>Ballistic Missile Defense Test and Targets</i>	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: <i>Ballistic Missile Defense Enabling Programs</i>	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: <i>SPECIAL PROGRAMS - MDA</i>	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: <i>BMD AEGIS</i>	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense</i> <i>Terminal Defense Segment</i>	PROJECT EX07: <i>Terminal High Altitude Area Defense</i> <i>(THAAD) Block 5.0</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i>	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: <i>MULTIPLE KILL VEHICLE</i>	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: <i>BMD C2BMC</i>	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: <i>BMD HERCULES</i>	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i>	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: <i>DIRECTED ENERGY RESEARCH</i>	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i>	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: <i>REGARDING TRENCH</i>	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i>	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: <i>BMD EUROPEAN CAPABILITY</i>	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604880C: <i>LAND-BASED SM-3</i>	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management Headquarters-MDA</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

D. Acquisition Strategy

The planned acquisition strategy for Advanced Capability Development activities is for a Sole Source Indefinite Delivery/Indefinite Quantity (IDIQ) contract, targeted for award in FY 2010. The program is posturing for potential competitive award in FY 2013. This contract type offers the flexibility of awarding separate Task Orders for the various statements of work requirements, each with its own duration and fee type.

In addition, MDA will transition from the existing legacy, project-oriented System Engineering and Technical Assistance (SETA) construct to an enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System (BDMS) mission. The objectives are to implement national engineering and support services for the BDMS mission across the enterprise, enhance the sharing of ballistic missile defense expertise and knowledge across the Agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support includes engineering and technical services; studies, analyses, and evaluation; and management and professional services.

E. Performance Metrics

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense</i> <i>Terminal Defense Segment</i>	PROJECT EX07: <i>Terminal High Altitude Area Defense</i> <i>(THAAD) Block 5.0</i>
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Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Test Lockheed Martin 12 EX07	SS/CPAF	LMSSC Sunnyvale, CA; Huntsville, AL; NM & HI	0.000	4.020		0.000		0.000		0.000	0	4.020	4.020
Weapon Sys Engr & Integ Team (WSEIT) Lockheed Martin 11 EX07	SS/CPAF	LMSSC Sunnyvale, CA & Huntsville, AL	0.000	29.394		0.000		0.000		0.000	0	29.394	29.685
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) Lockheed Martin and Raytheon EX07	SS/CPAF	LMSSC and Raytheon Huntsville, AL	0.000	14.181		0.000		0.000		0.000	0	14.181	14.181
Launcher Lockheed Martin 13 EX07	SS/CPAF	LMSSC Huntsville, AL; Camden, AK; Dallas & Lufkin, TX	0.000	1.500		0.000		0.000		0.000	0	1.500	1.500
Program Management Lockheed Martin EX07	SS/CPFF	LMSSC Sunnyvale, CA	0.000	3.717		0.000		0.000		0.000	0	3.717	3.717
MDA Infrastructure (QS, DEP, DEE, DOB) MDA Infrastructure(QS, DEP, DEE, DOB) EX07	Various/ Various	Various Various	0.000	7.314		0.000		0.000		0.000	0	7.314	7.314
Subtotal			0.000	60.126		0.000		0.000		0.000	0.000	60.126	60.417

Remarks

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT EX07: <i>Terminal High Altitude Area Defense (THAAD) Block 5.0</i>
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Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks

NA

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks

NA

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT EX07: <i>Terminal High Altitude Area Defense (THAAD) Block 5.0</i>
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Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Remarks NA													
			Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract			
Project Cost Totals			0.000	60.126	0.000	0.000	0.000	0.000	60.126	60.417			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT EX07: <i>Terminal High Altitude Area Defense (THAAD) Block 5.0</i>
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	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	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
Advanced Capability Development Contract Award								■																				
Advanced Capability Development SRR								■																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT EX07: <i>Terminal High Altitude Area Defense (THAAD) Block 5.0</i>
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Advanced Capability Development Contract Award	4	2010	4	2010
Advanced Capability Development SRR	4	2010	4	2010

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT XX07: <i>Terminal High Altitude Area Defense (THAAD) Sustainment</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
XX07: <i>Terminal High Altitude Area Defense (THAAD) Sustainment</i>	21.796	49.595	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	71.391
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

NA

A. Mission Description and Budget Item Justification

Operations & Sustainment Support of THAAD Batteries provides for logistical support to field, operate, maintain, repair and replenish the THAAD weapon system as it fielded to the Army. Contractor Logistics Support (CLS) technicians are responsible for field and sustainment maintenance including the repair and supply chain management of the required spares and repair parts. Also, the contractor will provide engineering support services and software maintenance support. The Operations & Sustainment Support associated with the Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radars allocated to THAAD Batteries are provided for under the Sensors Program Element.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Field Support and Contract Logistics Support (CLS) See Description Below <i>FY 2009 Accomplishments:</i> Award FY09 Field Support contract modification Continued THAAD Field Support/CLS for Battery #1 and #2 hardware Initiated development of Software Maintenance Plan required for Post Deployment Software Support (PDSS)	21.796	49.595	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT XX07: <i>Terminal High Altitude Area Defense (THAAD) Sustainment</i>
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B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Developed ;hardware/software utilization tracking system to ensure accountability/compatibility of THAAD end items Continued procurement of replenishment spares for Battery #1 and #2 Supported Collective Training for Battery #1 <i>FY 2010 Plans:</i> Continue THAAD field support/Contract Logistics Support (CLS) for Battery #1 and #2 hardware Complete software maintenance plan required for Post Deployment Software Sustainment (PDSS) Provide maintenance support for components tactical software Continue procurement of replenishment spares Support Force Development Experimentation (FDE) and Limited User Test (LUT) for Battery #1 Initiate New Equipment Training for Battery #2 Provide ;Supportability Engineering and Planning Support <i>FY 2011 Base Plans:</i> All Field Support and Contract Logistics Support transition to project MD07 in FY 2011 <i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	21.796	49.595	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.922

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE				PROJECT				
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)			PE 0603881C: Ballistic Missile Defense Terminal Defense Segment				XX07: Terminal High Altitude Area Defense (THAAD) Sustainment				
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603883C: Ballistic Missile Defense Boost Defense Segment	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: Ballistic Missile Defense Sensors	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: Ballistic Missile Defense System Interceptor	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: Ballistic Missile Defense Test and Targets	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: Ballistic Missile Defense Enabling Programs	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: SPECIAL PROGRAMS - MDA	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: BMD AEGIS	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: SPACE TRACKING & SURVEILLANCE SYSTEM	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: MULTIPLE KILL VEHICLE	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense</i> <i>Terminal Defense Segment</i>	PROJECT XX07: <i>Terminal High Altitude Area Defense</i> <i>(THAAD) Sustainment</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603906C: <i>REGARDING TRENCH</i>											
• 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i>	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: <i>BMD EUROPEAN CAPABILITY</i>	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
• 0604880C: <i>LAND-BASED SM-3</i>	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency	DATE: February 2010
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT XX07: <i>Terminal High Altitude Area Defense (THAAD) Sustainment</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0901598C: <i>Management Headquarters-MDA</i>											

D. Acquisition Strategy

The acquisition strategy implemented for FY 2009 modified the existing Development contract to add the Field Support and Contractor Logistics Support. The approved acquisition strategy, beginning in FY 2010, is to award a Sole Source, Indefinite Delivery/Indefinite Quantity (IDIQ) Delivery Order Contract for Field Support and Contractor Logistics Support.

E. Performance Metrics

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT XX07: <i>Terminal High Altitude Area Defense (THAAD) Sustainment</i>
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Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Field Support and Contract Logistics Support (CLS) Lockheed Martin and Raytheon2 XX07	SS/Various	LMSSC & Raytheon CA, TX, AL, MA, NH, IL, FL, & MD	21.372	49.595	Jan 2010	0.000		0.000		0.000	0	70.967	72.388
Subtotal			21.372	49.595		0.000		0.000		0.000	0.000	70.967	72.388

Remarks

NA

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Field Support and Contract Logistics Support (CLS) GFE XX07	TBD/TBD	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC Huntsville, AL	0.424	0.000		0.000		0.000		0.000	0	0.424	0.424
Subtotal			0.424	0.000		0.000		0.000		0.000	0.000	0.424	0.424

Remarks

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT XX07: <i>Terminal High Altitude Area Defense (THAAD) Sustainment</i>
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Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks
NA

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks
NA

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
	21.796	49.595		0.000		0.000		0.000	0.000	71.391	72.812

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT XX07: <i>Terminal High Altitude Area Defense (THAAD) Sustainment</i>
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	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015							
	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				
Field Support and CLS FY09 Contract Mod			■																													
Field Support and CLS FY10 Contract Award					■																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT XX07: <i>Terminal High Altitude Area Defense (THAAD) Sustainment</i>
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Field Support and CLS FY09 Contract Mod	3	2009	3	2009
Field Support and CLS FY10 Contract Award	1	2010	1	2010

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
MD07: <i>THAAD</i>	0.000	0.000	420.463	0.000	420.463	240.177	324.264	477.944	498.688	Continuing	Continuing
Quantity of RDT&E Articles	0	0	24	0	24	0	0	0	0		

Note

NA

A. Mission Description and Budget Item Justification

This is the continuation of THAAD's Advanced Capability Development and Sustainment. 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. This development continues the capability to launch THAAD interceptors using data from other Ballistic Missile Defense System (BMDS) sensor elements and an expansion of the THAAD element's capability to provide THAAD sensor data to the BMDS in support of the Unifying Missile Defense Function (UMDF). Development will include support of BMDS Command and Control/Battle Management and Communications (C2BMC) integration of Extremely High Frequency (EHF) communications, improved track correlation and engagement coordination with the BMDS, **and the ability to launch THAAD interceptors based on system track data from the C2BMC. This enhanced BMDS C2BMC interface enables the THAAD Interceptor Launch on BMD System Track. Development also continues the added capability to conduct Concurrent Test, Training, and Operations and continued participation in BMDS Integrated System Ground and Flight tests. Sustainment continues the field support and contractor logistics support for fielded Battery hardware. AN/TPY-2 Radar development will be performed under the Sensors Program Element and integrated into the THAAD weapon system.

** These enabling activities will allow delivery of the THAAD Launch on BMD System Track, part of BMDS Integrated Build D.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Batteries #1 and #2 See Description Below	0.000	0.000	63.851	0.000	63.851

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>		PROJECT MD07: <i>THAAD</i>	
B. Accomplishments/Planned Program (\$ in Millions)					
<p>** Engaging targets with countermeasures is a new capability being demonstrated in FY 2011</p> <p>*** CEC/EMEs are the conditions and events where data is obtained from flight and ground tests in order to anchor models and simulations</p> <p><i>FY 2011 OCO Plans:</i> NA</p>					
<p>Weapon Sys Engr & Integ Team (WSEIT)</p> <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> All WSEIT activities for FY 2009 are in project BX07</p> <p><i>FY 2010 Plans:</i> All WSEIT activities in FY 2010 are in projects BX07 and EX07</p> <p><i>FY 2011 Base Plans:</i> Responsible for all engineering efforts required to design, build, integrate and test approved Ballistic Missile Defense System (BMDS) Integrated Build D requirements, including use of Link-16 based BMD System tracks to complete ballistic missile engagement. 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. THAAD WSEIT is responsible for all aspects of risk management, system security, and information assurance for the THAAD program. Additionally, WSEIT will continue to develop the capability for Integrated BMDS Build D that continues to build upon the capabilities established in Builds A through C, (including functionality such as limited peer-to-peer engagement coordination and implementation</p>					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
	0.000	0.000	61.716	0.000	61.716

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> All Interceptor activities for FY 2009 are in project BX07</p> <p><i>FY 2010 Plans:</i> All Interceptor activities in FY 2010 are in projects BX07</p> <p><i>FY 2011 Base Plans:</i> The THAAD Interceptor is a certified round that is propelled by a single-stage, solid-propellant rocket booster. Its Kill Vehicle (KV) possesses a Divert and Attitude Control System (DACs) and an infrared Seeker used to destroy its target through hit-to-kill technology.</p> <p>Continue to support Insensitive Munitions/Final Hazard Classification (IM/FHC) testing Support stockpile reliability test program Complete transition of flight test program at Reagan Test Site (RTS) Support Flight Test program at RTS Complete support to Battery Interceptor production assembly Support post deployment software development Continue to support planning and execution of BMDS Integration tests to ensure missile performance optimizes overall BMDS performance Evaluate missile performance against real world scenarios and potential threats Continue to develop and implement retrofit activities on Battery Interceptors Continue development and fabrication of test instrumentation kits to support BMDS flight tests Complete (2) Missile Stockpile Test Sets</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
Integrated Logistics Support (ILS)		0.000	0.000	23.024	0.000	23.024

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> All ILS activities for FY 2009 are in project BX07</p> <p><i>FY 2010 Plans:</i> All ILS ;activities in FY 2010 are in project BX07</p> <p><i>FY 2011 Base Plans:</i> Provide each THAAD component with all aspects of logistics support. Responsible for transportation of all THAAD system equipment and 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 fielding of the THAAD System to the Army.</p> <p>Support the completion of transition to Reagan Test Site (RTS) Support Flight Test program at RTS Conduct Type 2 Business Case Analysis (BCA) for Sustainment Level Maintenance working in conjunction with Missile Defense Agency Deputy for acquisition Management to define supportability concept Complete Core Logistics Assessment and Core Depot Assessment/Source of Repair Analysis Finalize Depot Maintenance Support Plan Complete New Equipment Training (NET) and Collective Training for Battery #2 Update Contract Logistics Support concept Initiate Institutional Conduct of Fire (ICOFT) design and acquisition</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)		0.000	0.000	27.634	0.000	27.634

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010				
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B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> All TFCC activities for FY 2009 are in project BX07</p> <p><i>FY 2010 Plans:</i> All TFCC activities in FY 2010 are in projects BX07 and EX07</p> <p><i>FY 2011 Base Plans:</i> The THAAD Fire Control and Communication (TFCC) is composed of two Tactical Station Groups (TSGs). Each TSG consists of a Tactical Operations Station, a Launch Control Station, and a Station Support Group. The TFCC provides the Ballistic Missile Defense System (BMDS) Unifying Missile Defense Functions (UMDFs) and 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 and is the principal support to the BMDS UMDF. TFCC software changes, to include, improvement to Link 16 track correlation and engagement coordination with other BMDS elements; and external interface changes for integration of Command, and Control/Battle Management and Communications (C2BMC) Enhanced Communications are being incorporated.</p> <p>Complete transition of flight test program at Reagan Test Site (RTS) Support Flight Test program at RTS Continue implementation of the new BMDS requirements Continue implementation of the Link 16 update requirements to support BMDS UMDFs to include correlation, engagement coordination and planning Support of C2BMC in the integration of Extremely High Frequency (EHF) communications capabilities into the TFCC component ** Continue concept development for Launch on BMD System Track in support of the BMDS UMDFs</p>								

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> The Terminal High Altitude Area Defense (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.</p> <p>Complete transition of flight test program at Reagan Test Site (RTS) Support Flight Test program at RTS Support System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) integration activities of hardware and software Support Government Ground Testing in Cold Region Demonstration Support software development for Unifying Missile Defense Functions (UMDFs) **Continue Launcher software development of Launch on BMD System Track Continue engineering support to incorporate advanced capabilities into the current launcher design</p> <p>** This enabling activity will allow delivery of the THAAD Launch on BMD System Track capability in FY 2015; which is an addition to the ;BMDS Integrated Build D.</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Program Management See Description Below</p> <p><i>FY 2009 Accomplishments:</i> All Program Management activities for FY 2009 are in project BX07</p>		0.000	0.000	14.301	0.000	14.301

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> All Program Management activities for FY 2010 are in project BX07 and EX07</p> <p><i>FY 2011 Base Plans:</i> Program Management provides procurement support function across the program such as strategic planning, program integration, cost estimating, contracting, and financial management which includes preparation of financial statements, reimbursement of financial services provided by Defense Finance Accounting Service (DFAS), internal review and audit, earned-value management, and program assessment.</p> <p>Provide management, leadership, and planning for all activities Provide support to the Advanced Capability Development System Requirements Review (SRR) Provide salaries, travel, training, and supplies Continue to provide project-wide programmatic support</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Modeling and Simulations See Description Below</p> <p><i>FY 2009 Accomplishments:</i> NA</p> <p><i>FY 2010 Plans:</i> All Modeling and Simulations activities for FY 2010 are in project BX07</p>		0.000	0.000	13.090	0.000	13.090

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010				
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B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Continue integration of the BMDS stimulation framework with the additional sensors Provide common threat representations and scenarios to meet specific event and customer requirements for BMDS HWIL Framework</p> <p><i>FY 2011 OCO Plans:</i> NA</p>								
<p>Sustainment See Description Below</p> <p><i>FY 2009 Accomplishments:</i> All Sustainment activities for FY 2009 are in project XX07</p> <p><i>FY 2010 Plans:</i> All Sustainment activities in FY 2010 are in projects XX07 ;</p> <p><i>FY 2011 Base Plans:</i> Operations & Sustainment Support of THAAD Batteries provides for logistical support to field, operate, maintain, repair and replenish the THAAD weapon system as it fielded to the Army. Contractor Logistics Support (CLS) technicians are responsible for field and sustainment maintenance including the repair and supply chain management of the required spares and repair parts. Also, the contractor will provide engineering support services and software maintenance support. The Operations & Sustainment Support associated with the Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radars allocated to THAAD Batteries are provided for under the Sensors Program Element.</p> <p>Continue THAAD field support/CLS for Battery #1 and #2 hardware Provide maintenance support for components tactical software Continue procurement of replenishment spares</p>				0.000	0.000	85.985	0.000	85.985

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Complete New Equipment Training and Collective Training for Battery #2 Initiate Battery #1 Replacement Training Provide ;Supportability Engineering and Planning Support <i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	0.000	0.000	420.463	0.000	420.463

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.922
• 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i>	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: <i>Ballistic Missile Defense System Interceptor</i>	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: <i>Ballistic Missile Defense Test and Targets</i>	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: <i>Ballistic Missile Defense Enabling Programs</i>	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: <i>SPECIAL PROGRAMS - MDA</i>	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: <i>BMD AEGIS</i>	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i>	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: <i>MULTIPLE KILL VEHICLE</i>	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: <i>BMD C2BMC</i>	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: <i>BMD HERCULES</i>	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i>	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: <i>DIRECTED ENERGY RESEARCH</i>	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i>	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: <i>REGARDING TRENCH</i>	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i>	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: <i>BMD EUROPEAN CAPABILITY</i>	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604880C: <i>LAND-BASED SM-3</i>	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management Headquarters-MDA</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

D. Acquisition Strategy

The planned acquisition strategy for Advance Capability Development activities is for a Sole Source Indefinite Delivery/Indefinite Quantity (IDIQ) contract, targeted for award in FY 2010. The program is posturing for a potential competitive award in FY 2013. This contract type offers the flexibility of awarding separate Task Orders for the various statements of work requirements, each with its own duration and fee type. The acquisition strategy includes completion of Battery #1 and #2 contract, a Sole Source, Cost Plus Award Fee/Cost Plus Incentive Fee awarded December 22, 2006. This acquisition strategy includes continuation of a Sole Source Indefinite Delivery/Indefinite Quantity (IDIQ) Delivery Order Contract for Field Support and Contractor Logistics Support.

In addition, MDA will transition from the existing legacy, project-oriented System Engineering and Technical Assistance (SETA) construct to an enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System (BMDS) mission. The objectives are to implement national engineering and support services for the BMDS mission across the enterprise, enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support includes engineering and technical services; studies, analyses, and evaluation; and management and professional services.

E. Performance Metrics

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Batteries #1 and #2 Lockheed Martin 20 MD07	SS/CPIF	LMSSC Sunnyvale, CA; Huntsville, AL; NM & HI	0.000	0.000		63.851		0.000		63.851	0	63.851	63.851
Army Navy/ Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar Lockheed Martin 19 MD07	SS/CPAF	Raytheon Bedford, MA	0.000	0.000		21.852		0.000		21.852	102.111	123.963	123.963
Weapon Sys Engr & Integ Team (WSEIT) Lockheed Martin 14 MD07	SS/CPAF	LMSSC Sunnyvale, CA; Huntsville, AL	0.000	0.000		25.104		0.000		25.104	193.614	218.718	218.718
Interceptor Lockheed Martin 18 MD07	SS/CPAF	LMSSC CA/ TX,AL,MA,NH,IL,FL & MD	0.000	0.000		14.426		0.000		14.426	182.761	197.187	197.186
Integrated Logistics Support (ILS) Lockheed Martin 17 MD07	SS/CPAF	LMSSC/ Sunnyvale, CA Huntsville, AL	0.000	0.000		13.417		0.000		13.417	136.300	149.717	149.717
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) LMSSC and Raytheon MD07	SS/CPAF	LMSSC and Raytheon Huntsville, AL	0.000	0.000		18.611		0.000		18.611	100.168	118.779	118.779
Launcher Lockheed Martin 15 MD07	SS/CPAF	LMSSC Huntsville, AL	0.000	0.000		8.628		0.000		8.628	77.255	85.883	85.883

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Lockheed Martin 15 MD07	SS/CPAF	LMSSC Sunnyvale, CA; Huntsville, AL	0.000	0.000		5.694		0.000		5.694	65.511	71.205	71.205
Modeling and Simulations Teledyne Brown Eng MD07	Various/ Various	THAAD, Huntsville, AL Huntsville, AL	0.000	0.000		13.090		0.000		13.090	26.318	39.408	39.408
Sustainment Lockheed Martin 21 MD07	SS/Various	LMSSC and Raytheon CA/ TX,AL,MA,NH,IL,FL & MD	0.000	0.000		85.985		0.000		85.985	0	85.985	85.985
Subtotal			0.000	0.000		270.658		0.000		270.658	884.038	1,154.696	1,154.695

Remarks

NA

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Army Navy/ Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar	C/Various	MDA Arlington, VA	0.000	0.000		2.788		0.000		2.788	8.079	10.867	10.867

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MDA Program Support 6 MD07													
Weapon Sys Engr & Integ Team (WSEIT) Contract Support Services (CSS) 1 MD07	C/FFP	Dynetics, BAE & L3 Huntsville, AL & Salt Lake City, UT	0.000	0.000		5.771		0.000		5.771	24.133	29.904	29.904
Weapon Sys Engr & Integ Team (WSEIT) Other Government Agencies (OGA) 1 MD07	TBD/TBD	RDEC Huntsville, AL	0.000	0.000		24.075		0.000		24.075	72.657	96.732	96.732
Weapon Sys Engr & Integ Team (WSEIT) MDA Program Support 1 MD07	C/Various	MDA Arlington, VA	0.000	0.000		6.766		0.000		6.766	16.816	23.582	23.582
Interceptor Contract Support Services (CSS) 6 MD07	C/FFP	Dynetics & GA Tech Huntsville AL & GA	0.000	0.000		4.800		0.000		4.800	20.074	24.874	24.874
Interceptor Other Government Agencies 6 MD07	TBD/TBD	RDEC & SMDC Huntsville, AL	0.000	0.000		8.300		0.000		8.300	21.515	29.815	29.815
Interceptor MDA Program Support 5 MD07	C/Various	MDA Huntsville, AL	0.000	0.000		0.200		0.000		0.200	9.935	10.135	10.135
Integrated Logistics Support (ILS) Contract	C/FFP	Dynetic, TST, BAE Huntsville, AL; & Rockville, MD	0.000	0.000		3.520		0.000		3.520	14.721	18.241	18.241

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support Services 5 MD07													
Integrated Logistics Support (ILS) Other Government Agencies 5 MD07	TBD/TBD	IMMC & USAADASCH Huntsville, AL; & Fort Bliss, TX	0.000	0.000		6.087		0.000		6.087	15.777	21.864	21.864
Integrated Logistics Support (ILS) MDA Program Support 15 MD07	TBD/TBD	CECOM, TACOM, GSA, RDEC & SMDC Ft. Monmouth, NJ; Warren, MI & Huntsville, AL	0.000	0.000		0.000		0.000		0.000	8.985	8.985	8.985
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) Contract Support Services 2 MD07	C/FFP	Dynetics, DCD, & Davidson Tech Silver Spring, MD & Huntsville, AL	0.000	0.000		2.107		0.000		2.107	8.810	10.917	10.917
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) Other Government Agencies 2 MD07	TBD/TBD	NRDEC, RDEC Natick, MA & Huntsville, AL	0.000	0.000		3.643		0.000		3.643	9.443	13.086	13.086
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) MDA Program Support 2 MD07	C/Various	MDA Arlington, VA	0.000	0.000		3.273		0.000		3.273	7.958	11.231	11.231

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Launcher Contract Support Services (CSS) 3 MD07	C/FFP	Teledyne Solutions Huntsville, AL	0.000	0.000		1.600		0.000		1.600	6.691	8.291	8.291
Launcher Other Government Agencies 3 MD07	TBD/TBD	RDEC Huntsville, AL	0.000	0.000		2.767		0.000		2.767	7.172	9.939	9.939
Launcher MDA Program Support 3 MD07	C/Various	MDA Huntsville, AL	0.000	0.000		2.179		0.000		2.179	6.018	8.197	8.197
Program Management Contract Support Services 4 MD07	C/FFP	Dynetics, BAE & Tecolote Huntsville, AL	0.000	0.000		2.560		0.000		2.560	10.706	13.266	13.266
Program Management Other Government Agencies 4 MD07	C/Various	IMMC & USAADASCH Huntsville, AL & Fort Bliss, TX	0.000	0.000		4.427		0.000		4.427	11.474	15.901	15.901
Program Management MDA Program Support 4 MD07	C/Various	MDA Arlington, VA	0.000	0.000		1.620		0.000		1.620	4.873	6.493	6.493
Subtotal			0.000	0.000		86.483		0.000		86.483	285.837	372.320	372.320

Remarks

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Test Lockheed Martin 22 MD07	SS/CPAF	LMSSC Sunnyvale, CA; Huntsville, AL; NM & HI	0.000	0.000		20.954		0.000		20.954	140.505	161.459	161.459
System Test Contract Support Services (CSS) 30 MD07	C/FFP	Dynetics, L3 & TSI Huntsville, AL	0.000	0.000		3.659		0.000		3.659	15.301	18.960	18.960
System Test Other Government Agencies MD07	TBD/TBD	WSMR, PMRF, ATEC RDEC & SMDC NM, HI, VA, & Huntsville, AL	0.000	0.000		33.930		0.000		33.930	146.294	180.224	180.224
System Test MDA Program Support MD07	C/Various	MDA Arlington, VA	0.000	0.000		4.779		0.000		4.779	11.299	16.078	16.078
Subtotal			0.000	0.000		63.322		0.000		63.322	313.399	376.721	376.721

Remarks

NA

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
NA

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	420.463	0.000	420.463	1,483.274	1,903.737	1,903.736

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	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
THAAD System B1 S/W Formal Release										■																		
Element Weapon System Verification										■																		
GTX-04c (Full BMDS Distributed Test)										■																		
GTX-04d (Full BMDS HWIL Test)										■																		
Insensitive Munitions/Hazards testing Phase 4										■	■																	
Interceptor Delivery for FTT-13 (THAAD Intercept Flight Test)											■																	
Conduct FTT-13 (THAAD Intercept Flight Test)											■																	
Battery #2 Interceptor Deliveries Complete												■																
THAAD Laptop Planner Design Review												■																
GTX-04e (Full BMDS Regional Test)												■																
GTI-04(INT) (Full BMDS HWIL V&V)											■																	
GTI-04 (EXE) (Full BMDS HWIL Test)												■	■															
Interceptor Delivery for FTT-14 (THAAD Intercept Flight Test)													■															
Conduct FTT-14 (THAAD Intercept Flight Test)													■															
Advanced Capability Development Incremental Design Review (IDR)													■															
Conduct FTT-15 (THAAD Intercept Flight Test)														■														
Update to THAAD System Spec, PIDS, ICDs															■													
																■												

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	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
Conduct EPOCH-1 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)																												
Deliver Mobile Device for Concurrent Test, Training, Operations																												
Fire Control and Comm Concurrent Test, Training and OPS (CTTO) S/W Formal Rel																												
THAAD System B2 S/W Formal Release																												
THAAD UMDF Integration S/W Rel #1																												
Link 16 Formal Rel to Enable Launch on THAAD																												
Fire Control and Comm DMeTs/NET/ET S/W Formal Rel																												
Conduct FTT-16 (THAAD Intercept Flight Test)																												
Complete Institutional Conduct of Fire trainer (ICOFT)																												
Conduct FTT-17 (THAAD Intercept Flight Test)																												
Conduct FTT-18 (THAAD Intercept Flight Test)																												
Conduct FTT-19 (THAAD Intercept Flight Test)																												
THAAD System B3 S/W Formal Release																												
Conduct EPOCH-2 (GMD/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																												
Elements Requirements Verification																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
THAAD System B1 S/W Formal Release	1	2011	1	2011
Element Weapon System Verification	1	2011	1	2011
GTX-04c (Full BMDS Distributed Test)	1	2011	1	2011
GTX-04d (Full BMDS HWIL Test)	1	2011	1	2011
Insensitive Munitions/Hazards testing Phase 4	1	2011	2	2011
Interceptor Delivery for FTT-13 (THAAD Intercept Flight Test)	2	2011	2	2011
Conduct FTT-13 (THAAD Intercept Flight Test)	2	2011	2	2011
Battery #2 Interceptor Deliveries Complete	3	2011	3	2011
THAAD Laptop Planner Design Review	3	2011	3	2011
GTX-04e (Full BMDS Regional Test)	3	2011	3	2011
GTI-04(INT) (Full BMDS HWIL V&V)	2	2011	2	2011
GTI-04 (EXE) (Full BMDS HWIL Test)	3	2011	4	2011
Interceptor Delivery for FTT-14 (THAAD Intercept Flight Test)	4	2011	4	2011
Conduct FTT-14 (THAAD Intercept Flight Test)	4	2011	4	2011
Advanced Capability Development Incremental Design Review (IDR)	4	2011	4	2011
Conduct FTT-15 (THAAD Intercept Flight Test)	2	2012	2	2012
Update to THAAD System Spec, PIDS, ICDs	3	2012	3	2012
Conduct EPOCH-1 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Event	Start		End	
	Quarter	Year	Quarter	Year
Deliver Mobile Device for Concurrent Test, Training, Operations	4	2012	4	2012
Fire Control and Comm Concurrent Test, Training and OPS (CTTO) S/W Formal Rel	1	2013	1	2013
THAAD System B2 S/W Formal Release	1	2013	1	2013
THAAD UMDF Integration S/W Rel #1	1	2013	1	2013
Link 16 Formal Rel to Enable Launch on THAAD	1	2013	1	2013
Fire Control and Comm DMeTs/NET/ET S/W Formal Rel	1	2013	1	2013
Conduct FTT-16 (THAAD Intercept Flight Test)	2	2013	2	2013
Complete Institutional Conduct of Fire trainer (ICOFT)	1	2014	1	2014
Conduct FTT-17 (THAAD Intercept Flight Test)	1	2014	1	2014
Conduct FTT-18 (THAAD Intercept Flight Test)	3	2014	3	2014
Conduct FTT-19 (THAAD Intercept Flight Test)	1	2015	1	2015
THAAD System B3 S/W Formal Release	1	2015	1	2015
Conduct EPOCH-2 (GMD/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	3	2015	3	2015
Elements Requirements Verification	4	2015	4	2015
THAAD UMDF Integration S/W Rel #2	4	2015	4	2015
Complete Institutional Training Devices	4	2015	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	11.656	22.177	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	33.833
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

NA

A. Mission Description and Budget Item Justification

PATRIOT Advanced Capability-3 (PAC-3) is one of the most mature elements of the Ballistic Missile Defense System and is now operational with the U.S. Army. It is a land-based element built upon the proven PATRIOT air and missile defense infrastructure.

The PATRIOT Advanced Capability-3 System was deployed to the Middle East as part of Operation Iraqi Freedom where it successfully engaged several ballistic missiles.

The Army is responsible for production and further development of Advanced Capability-3 System; the Missile Defense Agency remains responsible for the Ballistic Missile Defense System interoperability and integration efforts.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Evolutionary Development Program (EDP) Task 2 See Description Below <i>FY 2009 Accomplishments:</i> FY09 WX06 PAC-3 funding was the first year of funding using this PE	11.656	21.017	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Evolutionary Development Program (EDP) Task 2 develops a capability against stressing TBM targets capability to be fielded in PDB-7 Increased BMDS effectiveness & lower tier element performance against evolving aerodynamic threats Concept and detailed requirements development underway Program plan has been implemented Additional development of Task 2 concepts Integration of code on the Modern Adjunct Processor (MAP) into the PATRIOT ECS</p> <p><i>FY 2010 Plans:</i> SW Coding, Performance Testing, Flight Testing, & Integration scheduled as part of PDB-7.0 Test & Fielding Program</p> <p><i>FY 2011 Base Plans:</i> NA</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>General Support See Description Below</p> <p><i>FY 2009 Accomplishments:</i> NA</p> <p><i>FY 2010 Plans:</i> Support the day to day tasking that is leveraged upon Lower Tier Project Office (LTPO) by MDA based on the Transfer and Transition Plan Annex L.</p>		0.000	1.160	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> NA					
<i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	11.656	22.177	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.922
• 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i>	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: <i>Ballistic Missile Defense System Interceptor</i>	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: <i>Ballistic Missile Defense Test and Targets</i>	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: <i>Ballistic Missile Defense Enabling Programs</i>	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: <i>SPECIAL PROGRAMS - MDA</i>	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: <i>BMD AEGIS</i>	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i>	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: <i>MULTIPLE KILL VEHICLE</i>	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: <i>BMD C2BMC</i>	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: <i>BMD HERCULES</i>	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i>	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: <i>DIRECTED ENERGY RESEARCH</i>	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i>	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: <i>REGARDING TRENCH</i>	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i>	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: <i>BMD EUROPEAN CAPABILITY</i>	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604880C: <i>LAND-BASED SM-3</i>	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management Headquarters-MDA</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

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.

E. Performance Metrics

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Evolutionary Development Program (EDP) Task 2 Evolutionary Development Program WX06	Various/ Various	Multiple Multiple	11.343	21.017		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			11.343	21.017		0.000		0.000		0.000			

Remarks

NA

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
General Support General Support WX06	C/FFP	CAS Huntsville, AL	0.000	1.160	Oct 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	1.160		0.000		0.000		0.000			

Remarks

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks

NA

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks

NA

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
	11.343	22.177		0.000		0.000		0.000			

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	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
Task 2 Follow-On PDR																												
Task 2 Follow-On CDR																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Task 2 Follow-On PDR	1	2010	1	2010
Task 2 Follow-On CDR	4	2010	4	2010

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	0.000	0.000	1.200	0.000	1.200	1.230	1.270	1.308	1.347	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

NA

A. Mission Description and Budget Item Justification

PATRIOT Advanced Capability (PAC 3) is one of the most mature elements of the Ballistic Missile Defense System and is now operational with the U.S. Army. It is a land-based element built upon the proven PATRIOT air and missile defense infrastructure.

The PATRIOT Advanced Capability-3 System was deployed to the Middle East as part of Operation Iraqi Freedom where it successfully engaged several ballistic missiles.

The Army is responsible for production and further development of Advanced Capability-3 System; the Missile Defense Agency remains responsible for the Ballistic Missile Defense System interoperability and integration efforts.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
General Support See Description Below <i>FY 2009 Accomplishments:</i> NA	0.000	0.000	1.200	0.000	1.200

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2010 Plans:</i> NA					
<i>FY 2011 Base Plans:</i> Support the day to day tasking that is leveraged upon Lower Tier Project Office (LTPO) by MDA based on the Transfer and Transition Plan ; Annex L.					
<i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	0.000	0.000	1.200	0.000	1.200

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.922
• 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i>	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: <i>Ballistic Missile Defense System Interceptor</i>	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
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	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603890C: <i>Ballistic Missile Defense Enabling Programs</i>											
• 0603891C: <i>SPECIAL PROGRAMS - MDA</i>	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: <i>BMD AEGIS</i>	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
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• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
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• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
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• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management Headquarters-MDA</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

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.

E. Performance Metrics

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks
NA

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
General Support General Support MD06	C/FFP	CAS Huntsville, AL	0.000	0.000		1.200		0.000		1.200	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		1.200		0.000		1.200			

Remarks
NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks

NA

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks

NA

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
	0.000	0.000		1.200		0.000		1.200			

Remarks

NA

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX26: <i>Israeli ARROW Program</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
<i>WX26: Israeli ARROW Program</i>	93.194	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	93.194
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

A new Program Element encompassing all of MDA's U.S. Israeli cooperative programs has been created under 0603913C Israeli Cooperative.

A. Mission Description and Budget Item Justification

This project provides funding for Arrow Weapon System (AWS) development, to include the Arrow System Improvement Program (ASIP), the Arrow Missile Production Program (AMPP) for the co-production of Arrow Interceptors, the Israeli Test Bed (ITB) experiments to evaluate Human-In-The-Loop (HIL) battle management, and the Israeli Systems Architecture and Integration (ISA&I) studies to assess Israel's future 2020 Missile Defense Architecture. The Arrow Weapon System provides Israel an indigenous capability to defend against short and medium range ballistic missiles. Further, Arrow also acts as a cornerstone of the Architecture Enhancement Plan which is a joint U.S.-Israeli effort to create a combined U.S.-Israeli multi-tier Missile Defense Architecture. In addition to the geo-strategic goals of the Arrow cooperative effort, the United States derives technical benefit from its participation in these projects and gains 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 FY 2009 to verify Arrow's improved performance and capability. Co-production will continue to increase the industrial production capacity of the Arrow II interceptor. The ITB and ISA&I efforts will continue to support AWS development as well as to define future missile defense architectures and growth paths. Finally, a new Upper Tier initiative has been started to provide Israel with additional capability against emerging regional threats.

Funding for these activities is directed by annual Congressional action.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Arrow System Improvement Program	46.900	0.000	0.000	0.000	0.000

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX26: <i>Israeli ARROW Program</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> Achieved Initial Operational Capability of the AWS Block 3.5 Conducted AST-13 (Arrow Block 4.0 intercept of Blue Sparrow Target) flight test in Israel Performed Arrow ground testing with U.S. BMDs Assets (JDIE 2008 #2) Conducted Caravan II flight test at U.S. test range</p> <p><i>FY 2010 Plans:</i> NA</p> <p><i>FY 2011 Base Plans:</i> NA</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Israeli Upper Tier</p> <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> With emerging weapons of mass destruction threats from regional enemies, the Government of Israel has determined a need for an upper-tier BMD system to complement the current Arrow Weapon System.</p> <p>Beginning in FY 2008, the U.S. and Israel began jointly assessing solutions for an upper-tier component for Israel's Missile Defense Architecture. By adding an upper-tier capability to their current</p>		28.800	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>BMD architecture, Israel will increase the system`s capability against advanced threats. The 2008 Joint Analysis of Alternatives study showed that Israel`s proposed Upper Tier Component Interceptor (Arrow-3) could provide better performance at a lower cost than the land-based Standard Missile-3 (SM-3) interceptor if development and cost objectives are met. However, technology and schedule for Arrow-3 have been assessed by MDA as high risk. Therefore, MDA has developed detailed Knowledge Points to assess Israel`s development progress for Arrow-3.</p> <p>Negotiated new International Program Agreement for the development of Upper Tier Component Interceptor Conducted System Requirements Review for the Arrow-3 interceptor Prototype seeker`s gimbal stabilization system tested in Rotation and Vibration platforms (Knowledge Point)</p> <p><i>FY 2010 Plans:</i> NA</p> <p><i>FY 2011 Base Plans:</i> NA</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Arrow Missile Production Program (AMPP)</p> <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> The co-manufacturing project further enhances the Arrow Weapon System by establishing a capability in the United States and the State of Israel to co-produce Arrow components and interceptors. The</p>		10.000	0.000	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX26: <i>Israeli ARROW Program</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>goal of the co-production effort is to accelerate production of Arrow interceptors to meet Israel's defense requirements. The current production plan will be completed in 2011 and meet the Israeli Defense Forces (IDF) current inventory requirement. However, discussions are ongoing to possibly increase these requirements and thus extend the co-production program.</p> <p>Continued Option III deliveries</p> <p><i>FY 2010 Plans:</i> NA</p> <p><i>FY 2011 Base Plans:</i> NA</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Israeli Test Bed (ITB)</p> <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> The Israeli Test Bed (ITB) is a cooperative effort conducted under the 30 March 1989 Theater Ballistic Missile Defense Test Bed Memorandum of Agreement between the U.S. and Israel. 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. Many of the exercises accomplished on the ITB include participation of U.S. and Israel warfighters. The principal ITB facility resides at Holon, Israel. A second ITB capability is operational at the Missile Defense Agency's Advanced Research Center in Huntsville, Alabama.</p>		3.535	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Accomplished 3 experiments refining HIL tools for Command and Control, developing regional defense architectures, and impacts to tactics, techniques and procedures of the combined U.S.-Israeli Multi-tier Missile Defense Architecture.</p> <p><i>FY 2010 Plans:</i> NA</p> <p><i>FY 2011 Base Plans:</i> NA</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Israeli Systems Architecture and Integration (ISA&I)</p> <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> The Israeli Systems Architecture and Integration (ISA&I) Study provides analyses of the future 2020 Israeli Missile Defense Architecture, growth paths for future development and interoperability with U.S. BMDS assets. 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&I effort is contracted by MDA to an Israeli consulting firm.</p> <p>Continued studies on emerging regional ballistic missile threats, growth path options for the Israeli Missile Defense Architecture and evaluate Israeli and U.S. missile defense systems interoperability.</p>		3.517	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> NA</p> <p><i>FY 2011 Base Plans:</i> NA</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
<p>Program Support See Description Below</p> <p><i>FY 2009 Accomplishments:</i> 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. ;</p> <p><i>FY 2010 Plans:</i> NA</p> <p><i>FY 2011 Base Plans:</i> NA</p> <p><i>FY 2011 OCO Plans:</i> NA</p>		0.442	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	93.194	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.922
• 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i>	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: <i>Ballistic Missile Defense System Interceptor</i>	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: <i>Ballistic Missile Defense Test and Targets</i>	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: <i>Ballistic Missile Defense Enabling Programs</i>	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: <i>SPECIAL PROGRAMS - MDA</i>	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: <i>BMD AEGIS</i>	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i>	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: <i>MULTIPLE KILL VEHICLE</i>	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603896C: <i>BMD C2BMC</i>	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: <i>BMD HERCULES</i>	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i>	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: <i>DIRECTED ENERGY RESEARCH</i>	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i>	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: <i>REGARDING TRENCH</i>	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i>	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: <i>BMD EUROPEAN CAPABILITY</i>	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
• 0604880C: <i>LAND-BASED SM-3</i>	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339

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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>											
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management Headquarters-MDA</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

D. Acquisition Strategy

As a bi-lateral cooperative program with the State of Israel, the Arrow Program does not follow normal DoD Acquisition Practices. The program is managed by an Israeli Co-Program Manager and, equal in responsibility, an U.S. Co-Program Manager. Program funding is equitable between the U.S. and Israel with Israel providing matching funds. However, a portion of the Israeli cost share is from non-financial contributions such as background information and facilities. 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, MDA contracts directly with Tadiran while IMoD provides their share of the funding to U.S. Finally, MDA contracts directly with WALES, Ltd for the Israeli System Architecture and Integration.

E. Performance Metrics

NA

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Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Arrow System Improvement Program ASIP WX26	TBD/CPFF	IAI Israel	105.760	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Israeli Upper Tier Arrow Upper Tier WX26	TBD/CPFF	IAI Israel	48.260	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Arrow Missile Production Program (AMPP) Arrow Missile Production WX26	TBD/FFP	IAI & Boeing Israel & AL	45.104	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Israeli Test Bed (ITB) Israeli Test Bed WX26	TBD/FFP	Tadiran Israel	7.070	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Israeli Systems Architecture and Integration (ISA&I) ISA&I WX26	TBD/FFP	Wales, LTD Israel	4.384	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Program Support Program Support WX26	TBD/FFP	Various Various	1.156	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			211.734	0.000		0.000		0.000		0.000			

Remarks

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX26: <i>Israeli ARROW Program</i>
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Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks
NA

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks
NA

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX26: <i>Israeli ARROW Program</i>
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Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
NA

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	211.734	0.000	0.000	0.000	0.000			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX26: <i>Israeli ARROW Program</i>
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	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	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
Interoperability Test (JDIE08)			■																									
Arrow System Test 13 in Israel			■																									
Enhanced Arrow Test in U.S.			■																									
Arrow 3 Seeker Stabilization KP			■																									
Arrow-3 SRR			■																									
Israeli Test Bed Experiment-1Q2009	■																											
Israeli Test Bed Experiment-2Q2009		■																										
Israeli Test Bed Experiment-4Q2009				■																								

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX26: <i>Israeli ARROW Program</i>
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Interoperability Test (JDIE08)	3	2009	3	2009
Arrow System Test 13 in Israel	3	2009	3	2009
Enhanced Arrow Test in U.S.	3	2009	3	2009
Arrow 3 Seeker Stabilization KP	3	2009	3	2009
Arrow-3 SRR	3	2009	3	2009
Israeli Test Bed Experiment-1Q2009	1	2009	1	2009
Israeli Test Bed Experiment-2Q2009	2	2009	2	2009
Israeli Test Bed Experiment-4Q2009	4	2009	4	2009

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX34: <i>Short Range Ballistic Missile Defense</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
<i>WX34: Short Range Ballistic Missile Defense</i>	70.786	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	70.786
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

A new Program Element encompassing all of MDA's U.S. Israeli cooperative programs has been created under 0603913C Israeli Cooperative.

A. Mission Description and Budget Item Justification

The 2006 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 the Israeli SRBMD program is to provide an affordable defense capability. In March 2005, the U.S. and Israel initiated a joint 18-month feasibility study of a low-cost SRBMD capability as a compliment to the Arrow Weapon System. This was followed in May 2006 by Israeli's down selection to the David's Sling Weapon System (DSWS) for their SRBMD solution. While currently there is no U.S. requirement for a SRBMD system MDA plans to influence specifications and development decisions to ensure the system could be suitable for potential future U.S. needs and interoperable with the U.S. Ballistic Missile Defense System (BMDS). The system is to be developed in development blocks with the initial block providing a baseline capability against long range rockets and short range ballistic missiles.

Under the U.S.-Israeli Project Agreement signed in September 2008, the project is jointly managed by the U.S. Missile Defense Agency and the Israeli Missile Defense Organization. The agreement documents the U.S.-Israeli cost share, in which the development costs are equitable between the U.S. and Israel with Israel providing matching funds. However a portion of the Israeli cost share is from non-financial contributions such as background information and facilities.

Funding for these activities is directed by annual Congressional action.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
SRBMD Program	70.786	0.000	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX34: <i>Short Range Ballistic Missile Defense</i>
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B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
See Description Below					
<i>FY 2009 Accomplishments:</i> Completed DSWS Block 1 System and Sub-System Preliminary Design Reviews Completed controlled navigation fly-out test of the booster					
<i>FY 2010 Plans:</i> NA					
<i>FY 2011 Base Plans:</i> NA					
<i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	70.786	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.922
• 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i>	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX34: <i>Short Range Ballistic Missile Defense</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603886C: <i>Ballistic Missile Defense System Interceptor</i>											
• 0603888C: <i>Ballistic Missile Defense Test and Targets</i>	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: <i>Ballistic Missile Defense Enabling Programs</i>	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: <i>SPECIAL PROGRAMS - MDA</i>	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: <i>BMD AEGIS</i>	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i>	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: <i>MULTIPLE KILL VEHICLE</i>	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: <i>BMD C2BMC</i>	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: <i>BMD HERCULES</i>	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i>	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: <i>DIRECTED ENERGY RESEARCH</i>	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i>	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: <i>REGARDING TRENCH</i>	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i>	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX34: <i>Short Range Ballistic Missile Defense</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>											
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: <i>BMD EUROPEAN CAPABILITY</i>	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
• 0604880C: <i>LAND-BASED SM-3</i>	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management Headquarters-MDA</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

D. Acquisition Strategy

As a bi-lateral cooperative program with the State of Israel, the SRBMD program does not follow normal DoD Acquisition Practices. The program is managed through a joint program office led by an Israeli Co-Program Manager and, equal in responsibility, an U.S. Co-Program Manager. Program funding is equitable between the U.S. and Israel with Israel providing matching funds. However, a portion of the Israeli cost share is from non-financial contributions such as background information and facilities. With the David Sling Weapon System, Israel Ministry of Defense (IMoD) contracts on behalf of U.S. government to Rafael and other David's Sling Weapon

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX34: <i>Short Range Ballistic Missile Defense</i>
System contractors. A Short Range Ballistic Missile Defense Project Agreement under the RDT&E Framework agreement between U.S. and Israel was signed Sept 2008.		
<u>E. Performance Metrics</u> NA		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX34: <i>Short Range Ballistic Missile Defense</i>
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Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SRBMD Program SRBMD Program WX34	TBD/CPFF	Rafael Israel	109.021	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			109.021	0.000		0.000		0.000		0.000			

Remarks

NA

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SRBMD Program SRBMD Program WX34	TBD/CPFF	Rafael Israel	109.021	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			109.021	0.000		0.000		0.000		0.000			

Remarks

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX34: <i>Short Range Ballistic Missile Defense</i>
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Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SRBMD Program SRBMD Program WX34	TBD/CPFF	Rafael Israel	109.021	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			109.021	0.000		0.000		0.000		0.000			

Remarks

NA

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SRBMD Program SRBMD Program WX34	TBD/CPFF	Rafael Israel	109.021	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			109.021	0.000		0.000		0.000		0.000			

Remarks

NA

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract	
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Project Cost Totals	436.084	0.000		0.000		0.000		0.000				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX34: <i>Short Range Ballistic Missile Defense</i>
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	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks NA								
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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX34: <i>Short Range Ballistic Missile Defense</i>

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	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
Interceptor Flyout		■																										
Preliminary Design Review		■																										

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT WX34: <i>Short Range Ballistic Missile Defense</i>
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Interceptor Flyout	2	2009	2	2009
Preliminary Design Review	2	2009	2	2009

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT ZX40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
ZX40: <i>Program-Wide Support</i>	25.048	31.721	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	56.769
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Project ZX40 is now captured in Project MD40 beginning in FY11

A. Mission Description and Budget Item Justification

Program-Wide Support provides funding for common non-headquarters support functions across the entire program. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2), 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 fluctuations on a limited number of foreign contracts.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Civilian Salaries and Support See Description Below <i>FY 2009 Accomplishments:</i> See Section A: Mission Description and Budget Item Justification <i>FY 2010 Plans:</i> NA	25.048	31.721	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT ZX40: <i>Program-Wide Support</i>
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B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> NA					
<i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	25.048	31.721	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.922
• 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i>	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: <i>Ballistic Missile Defense System Interceptor</i>	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: <i>Ballistic Missile Defense Test and Targets</i>	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: <i>Ballistic Missile Defense Enabling Programs</i>	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: <i>SPECIAL PROGRAMS - MDA</i>	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: <i>BMD AEGIS</i>	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT ZX40: <i>Program-Wide Support</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i>	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: <i>MULTIPLE KILL VEHICLE</i>	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: <i>BMD C2BMC</i>	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: <i>BMD HERCULES</i>	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i>	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: <i>DIRECTED ENERGY RESEARCH</i>	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i>	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: <i>REGARDING TRENCH</i>	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i>	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: <i>BMD EUROPEAN CAPABILITY</i>	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT ZX40: <i>Program-Wide Support</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604880C: <i>LAND-BASED SM-3</i>	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management Headquarters-MDA</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

D. Acquisition Strategy

NA

E. Performance Metrics

NA

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	0.000	0.000	14.819	0.000	14.819	8.868	11.177	21.731	21.682	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Project ZX40 is now captured in Project MD40 beginning in FY11

A. Mission Description and Budget Item Justification

Program-Wide Support provides funding for common non-headquarters support functions across the entire program. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2), 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 fluctuations on a limited number of foreign contracts.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Civilian Salaries and Support See Description Below <i>FY 2009 Accomplishments:</i> NA <i>FY 2010 Plans:</i> NA	0.000	0.000	14.819	0.000	14.819

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

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B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> NA					
<i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	0.000	0.000	14.819	0.000	14.819

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
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• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
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• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

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C. Other Program Funding Summary (\$ in Millions)

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• 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management Headquarters-MDA</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

D. Acquisition Strategy

MDA will transition from the existing legacy, project-oriented Systems Engineering and Technical Assistance (SETA) contractor construct to an enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System (BMDS) mission. The objectives are to implement national engineering and support services for the BMDS mission across the enterprise, enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support includes engineering and technical services; studies, analyses, and evaluation; and management and professional services.

E. Performance Metrics

NA

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